UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 8-K

Current Report Pursuant to
Section 13 or 15(d) of the
Securities Exchange Act of 1934

Date of Report (Date of Earliest Event Reported): November 1, 2021

2seventy bio, Inc.

(Exact name of Registrant as Specified in Its Charter)

Delaware	**001-40791**	**86-3658454**
(State or Other Jurisdiction of Incorporation)	**(Commission File Number)**	**(IRS Employer Identification No.)**
60 Binney Street, Cambridge, MA		**02142**
(Address of Principal Executive Offices)		**(Zip Code)**

Registrant's Telephone Number, Including Area Code: (339) 499-9300

Not Applicable
(Former Name or Former Address, if Changed Since Last Report)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions (see General Instructions A.2. below):

☐ Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)

☐ Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)

☐ Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))

☐ Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, $0.0001 par value per share	TSVT	The NASDAQ Stock Market LLC

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§240.12b-2 of this chapter).

Emerging growth company ☒

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Item 1.01 Entry into a Material Definitive Agreement.

Agreements with bluebird bio

On November 4, 2021, bluebird bio, Inc. ("bluebird bio") completed the previously announced separation of its oncology portfolio and programs, and certain other assets and liabilities, into a separate, independent publicly traded company (the "Separation"). The Separation was effected by means of a distribution of all of the outstanding shares of common stock of 2seventy bio, Inc. ("2seventy bio") in which each bluebird bio stockholder received one share of common stock, par value $0.0001 per share, of 2seventy bio ("2seventy Common Stock") for every three shares of common stock, par value $0.01 per share, of bluebird bio held as of the close of business on October 19, 2021, the record date for the distribution (the "Distribution"). The Distribution was effective at 12:01 a.m. on November 4, 2021. As a result of the Separation and Distribution, 2seventy bio became an independent public company and will commence regular way trading under the symbol "TSVT" on the Nasdaq Global Market on November 5, 2021.

In connection with the Separation, on November 3, 2021, 2seventy bio entered into certain agreements with bluebird bio to provide a framework for 2seventy bio's relationship with bluebird bio following the Separation, including, among others, the following agreements:

- Separation Agreement
- Tax Matters Agreement
- Employee Matters Agreement
- Intellectual Property License Agreement
- bluebird bio Transition Services Agreement
- 2seventy bio Transition Services Agreement

A summary of each of the foregoing agreements can be found in the section entitled "Certain Relationships and Related Person Transactions—Agreements with bluebird bio" of the Information Statement, dated October 18, 2021, filed as Exhibit 99.1 to this Current Report on Form 8-K (the "Information Statement"), and is incorporated into this Item 1.01 by reference. In addition, the descriptions of the foregoing agreements are qualified in their entirety by reference to the complete terms and conditions of those agreements, which are attached as Exhibits 2.1, 10.1, 10.2, 10.3, 10.4, and 10.5, respectively, to this Current Report on Form 8-K and incorporated into this Item 1.01 by reference.

Private Placement Agreements

In connection with the Separation and pursuant to the terms of the securities purchase agreement, dated September 10, 2021, by and among bluebird bio and certain institutional investors, 2seventy bio issued to each institutional investor holding a bluebird bio pre-funded warrant a new pre-funded warrant for the number of shares of 2seventy Common Stock that the institutional investor would have been entitled to receive in connection with the distribution had the unexercised portion of such pre-funded warrant at the effective time of the distribution been fully exercised at the effective time of the distribution (the "2seventy Pre-Funded Warrants").

In connection with Separation, 2seventy bio also entered into an assumption agreement pursuant to which 2seventy bio assumed all of bluebird bio's obligations (1) under the registration rights agreement that bluebird bio entered into on September 10, 2021 with certain institutional investors, solely in connection with the shares of 2seventy Common Stock that the institutional investors received in the distribution with respect to the shares of bluebird bio common stock they held as of the record date for the Distribution and any shares of 2seventy Common Stock that the institutional investors receive upon exercise of the 2seventy Pre-Funded Warrants and (2) under Article IV of the securities purchase agreement in connection with the shares of 2seventy Common Stock that the institutional investors received in the distribution with respect to the shares of bluebird bio common stock they held as of the record date for the Distribution and any shares of 2seventy Common Stock that the institutional investors receive upon exercise of the 2seventy Pre-Funded Warrant 2seventy bio will issue to them.

A summary of the 2seventy Pre-Funded Warrant, the assumption agreement, the registration rights agreement, and the assumed obligations under the securities purchase agreement can be found in the section entitled "Certain Relationships and Related Person Transactions—Private Placement" of the Information Statement and is incorporated into this Item 1.01 by reference. In addition, the description of the assumption agreement and the 2seventy Pre-Funded Warrant are qualified in their entirety by reference to the complete terms and conditions of the assumption agreement and pre-funded warrant, which are attached as Exhibits 10.6 and 10.7, respectively, to this Current Report on Form 8-K and incorporated into this Item 1.01 by reference.

Item 2.01. Completion of Acquisition or Disposition of Assets.

The description of the Separation and Distribution included under Item 1.01 of this Current Report on Form 8-K is incorporated into this Item 2.01 by reference.

Item 3.02. Unregistered Sales of Equity Securities.

The disclosure included under the header "Private Placement Agreements" under Item 1.01 of this Current Report on Form 8-K with respect to the 2seventy Pre-Funded Warrants is incorporated into this Item 3.02 by reference. The 2seventy Pre-Funded Warrants were issued pursuant to Section 4(a)(2) of the Securities Act of 1933, as amended (the "Securities Act"), and Rule 506(b) of Regulation D ("Regulation D") as promulgated by the SEC under the Securities Act. Each institutional investor is either (i) an "accredited investor" as defined in Rule 501(a)(1), (a)(2), (a)(3), (a)(7) or (a)(8) under the Securities Act or (ii) a "qualified institutional buyer" as defined in Rule 144A(a) under the Securities Act and is acquiring the securities for investment purposes only and not with a view to, or for sale in connection with, any distribution thereof. The securities were not issued through any general solicitation or advertisement.

Item 3.03. Material Modification to Rights of Security Holders.

The descriptions of the Amended and Restated Charter and Restated By-Laws (each as defined below) included under Item 5.03 of this Current Report on Form 8-K is incorporated into this Item 3.03 by reference.

Item 5.01. Changes in Control of Registrant.

Immediately prior to the Separation and Distribution, 2seventy bio was a wholly owned subsidiary of bluebird bio. Following completion of the Separation and Distribution, 2seventy bio became an independent, publicly traded company, and bluebird bio retains no ownership interest in 2seventy bio. The description of the Separation and Distribution included under Item 1.01 of this Current Report on Form 8-K is incorporated into this Item 5.01 by reference.

Item 5.02. Departure of Directors or Certain Officers; Election of Directors; Appointment of Certain Officers; Compensatory Arrangements of Certain Officers.

Appointment of Executive Officers

In connection with the Separation, the following individuals were elected to the positions set forth in the table below:

Name	Position
Nick Leschly	Chief Executive Officer
William D. Baird, III	Chief Financial Officer
Philip Gregory, D. Phil.	Chief Scientific Officer
Nicola Heffron	Chief Operating Officer

Biographical information for each of the executive officers named above can be found in the Information Statement under the section entitled “Management—Executive Officers,” which is incorporated into this Item 5.02 by reference. Except as disclosed in the Information Statement in the section entitled "Certain Relationships and Related Person Transactions", none of Mr. Leschly, Mr. Baird, Dr. Gregory or Ms. Heffron is, or has been since January 1, 2021, a participant in any transaction involving 2seventy bio, and is not a participant in any proposed transaction with 2seventy bio, in each case, required to be disclosed pursuant to Item 404(a) of Regulation S-K.

Employment Agreements with Messrs. Leschly and Baird and Dr. Gregory

On November 4, 2021, 2seventy bio entered into employment agreements with each of Mr. Leschly, Mr. Baird and Dr. Gregory. A summary of the employment agreements with each of Mr. Leschly, Mr. Baird and Dr. Gregory can be found in the section entitled “Executive Compensation—New Employment Agreements Between our Named Executive Officers and 2seventy bio” of the Information Statement and is incorporated into this Item 5.02 by reference. In addition, the descriptions of the foregoing agreements are qualified in their entirety by reference to the complete terms and conditions of those agreements, which are attached as Exhibits 10.8, 10.9 and 10.10, respectively, to this Current Report on Form 8-K and incorporated into this Item 5.02 by reference.

Indemnification Agreements

In connection with the Separation, each of the executive officers named above and each of 2seventy bio’s directors entered into an indemnification agreement with 2seventy bio substantially in the forms attached as 10.6 and 10.7 to 2seventy bio’s Registration Statement on Form 10, filed with the Commission on October 8, 2021 (File No. 001-40791).

Item 5.03. Amendments to Articles of Incorporation or Bylaws; Change in Fiscal Year.

Each of the Certificate of Incorporation of 2seventy bio (the “Restated Charter”) and the Bylaws of 2seventy bio (the “Amended and Restated Bylaws”) were amended and restated, effective November 1, 2021 and November 4, 2021, respectively. A description of the material provisions of the Restated Charter and the Amended and Restated Bylaws can be found in the Information Statement under the section entitled “Description of 2seventy bio’s Capital Stock,” which is incorporated into this Item 5.03 by reference. The description set forth under this Item 5.03 is qualified in its entirety by reference to the full text of the Restated Charter and the Amended and Restated Bylaws, which are included in this Current Report on Form 8-K as Exhibits 3.1 and 3.2, respectively.

Item 7.01. Regulation FD Disclosure.

On November 4, 2021, 2seventy bio issued a press release announcing the completion of the Separation and the launch of its operations as an independent company. A copy of the press release is attached to this Current Report on Form 8-K as Exhibit 99.2 and is incorporated into this Item 7.01 by reference.

Item 9.01 Financial Statements and Exhibits

(d) Exhibits

Exhibit No.	Description
2.1*	Separation Agreement, dated as of November 3, 2021, by and between bluebird bio, Inc. and 2seventy bio, Inc.
3.1	Amended and Restated Certificate of Incorporation of 2seventy bio, Inc.
3.2	Amended and Restated By-Laws of 2seventy bio, Inc.
10.1	Tax Matters Agreement, dated as of November 3, 2021, by and between bluebird bio, Inc. and 2seventy bio, Inc.
10.2*	Employee Matters Agreement, dated as of November 3, 2021, by and between bluebird bio, Inc. and 2seventy bio, Inc.
10.3*	Intellectual Property License Agreement, dated as of November 3, 2021, by and between bluebird bio, Inc. and 2seventy bio, Inc.
10.4*	Transition Services Agreement, dated as of November 3, 2021, by and between bluebird bio, Inc. and 2seventy bio, Inc.
10.5*	Transition Services Agreement, dated as of November 3, 2021, by and between 2seventy bio, Inc. and bluebird bio, Inc.
10.6*#	Assumption Agreement, dated as of November 3, 2021, by and between 2seventy bio, Inc. and bluebird bio, Inc. with respect to Securities Purchase Agreement, dated September 7, 2021, by and among bluebird bio, Inc. and the institutional investors named therein, and Registration Rights Agreement, dated September 7, 2021, by and among bluebird bio, Inc. and the persons listed on the attached Schedule A thereto.
10.7	Form of Pre-Funded Warrant (incorporated by reference to Exhibit 4.1 to Registration Statement on Form 10 filed on October 8, 2021 (File No. 001-40791)).
10.8+	Executive Employment Agreement, effective as of November 4, 2021, by and between 2seventy bio, Inc. and Nick Leschly
10.9+	Executive Employment Agreement, effective as of November 4, 2021, by and between 2seventy bio, Inc. and William Baird
10.10+	Executive Employment Agreement, effective as of November 4, 2021, by and between 2seventy bio, Inc. and Philip Gregory
99.1	Information Statement of 2seventy bio, Inc., dated October 18, 2021.
99.2	Press Release of 2seventy bio, Inc., dated November 4, 2021.
104	Cover Page Interactive Data File (embedded within the Inline XBRL document)

* Schedules and exhibits have been omitted pursuant to Item 601(b)(2) of Regulation S-K. 2seventy bio hereby undertakes to furnish copies of any of the omitted schedules and exhibits upon request by the U.S. Securities and Exchange Commission.

\+ Management contract or compensatory plan or arrangement.

\# Portions of this exhibit (indicated by asterisks) have been omitted in accordance with the rules of the SEC.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

2seventy bio, Inc.

Dated: November 4, 2021

By: /s/ Nick Leschly

Name: Nick Leschly

Title: Chief Executive Officer

SEPARATION AGREEMENT

by and between

BLUEBIRD BIO, INC.

and

2SEVENTY BIO, INC.

Dated as of November 3, 2021

SEPARATION AGREEMENT

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SEPARATION AGREEMENT

This SEPARATION AGREEMENT (this "Agreement"), dated as of November 3, 2021, is entered into by and between bluebird bio, Inc. ("bluebird"), a Delaware corporation, and 2seventy bio, Inc. ("2seventy"), a Delaware corporation and a wholly owned Subsidiary of bluebird. "Party" or "Parties" means bluebird or 2seventy, individually or collectively, as the case may be. Each capitalized term used and not elsewhere defined herein has the meaning set forth in Section 1.1.

W I T N E S S E T H:

WHEREAS, bluebird, acting together with its Subsidiaries, currently conducts the Severe Genetic Disease Business and the Oncology Business;

WHEREAS, the Board of Directors of bluebird (the "Board") has determined that it is appropriate, desirable and in the best interests of bluebird and its stockholders to separate bluebird into two separate, publicly-traded companies, one for each of (i) the Severe Genetic Disease Business, which shall be owned and conducted, directly or indirectly, by bluebird and its Subsidiaries and (ii) the Oncology Business, which shall be owned and conducted, directly or indirectly, by 2seventy and its Subsidiaries, if any (the "Separation");

WHEREAS, as part of and to implement the Separation, (i) bluebird shall, and shall cause its Subsidiaries to, contribute, assign, transfer, convey and deliver to 2seventy or its designees, the 2seventy Assets in exchange for (x) the assumption by 2seventy and its Subsidiaries of the 2seventy Liabilities and (y) the issuance by 2seventy to bluebird of shares of 2seventy Common Stock, and (ii) bluebird shall cause the Distribution Agent to issue pro rata to the Record Holders pursuant to the Distribution Ratio, all of the issued and outstanding shares of 2seventy Common Stock (such issuance, the "Distribution") on the terms and conditions set forth in this Agreement;

WHEREAS, it is appropriate and desirable to set forth the principal corporate transactions required to effect the Separation and certain other agreements relating to the relationship of bluebird and 2seventy and their respective Subsidiaries following the Distribution;

WHEREAS, (i) the Board has (x) determined that the Separation and the other transactions contemplated by this Agreement and the Ancillary Agreements (as defined below) have a valid business purpose, are in furtherance of and consistent with its business strategy and are in the best interests of bluebird and its stockholders and (y) approved this Agreement and each of the Ancillary Agreements and (ii) the board of directors of 2seventy has approved this Agreement and each of the Ancillary Agreements to which 2seventy is a party;

WHEREAS, the Parties acknowledge that this Agreement and the Ancillary Agreements represent the integrated agreement of bluebird and 2seventy relating to the Separation and the Distribution, are being entered into together and would not have been entered into independently; and

WHEREAS, for U.S. federal income tax purposes, it is the intention of the Parties that the Separation and the Distribution, taken together, will qualify as a reorganization within the meaning of Section 368(a)(1)(D) by reason of the Distribution qualifying under Section 355 of the Code; and

WHEREAS, this Agreement is intended and updated as a "plan of reorganization" within the meaning of Treasury Regulations Section 1.368-2(g).

NOW, THEREFORE, in consideration of the foregoing and the mutual agreements, provisions and covenants contained in this Agreement, the Parties hereby agree as follows:

ARTICLE I
DEFINITIONS AND INTERPRETATION

Section 1.1 General. As used in this Agreement, the following terms shall have the following meanings:

(1) "2seventy" shall have the meaning set forth in the Recitals.

(2) "2seventy Assets" means the following, but in each case excluding the Excluded Assets:

(i) all interests in the capital stock of, or any other equity interests in, the members of the 2seventy Group held, directly or indirectly, by bluebird immediately prior to the Distribution Effective Time (other than the capital stock of 2seventy);

(ii) all Intellectual Property that is exclusively related to the Oncology Business, including the Intellectual Property identified on Schedule 1.1(2)(ii);

(iii) all Trademarks that are exclusively related to the Oncology Business (hereafter, "2seventy Trademarks"), including the Trademarks identified on Schedule 1.1(2)(iii);

(iv) all inventory of 2seventy Product Candidates, including the materials, components, and packaging materials required to manufacture and/or package the corresponding 2seventy Product Candidates;

(v) any and all Assets that are expressly assigned by this Agreement or any Ancillary Agreement (or the Schedules hereto or thereto) as Assets which have been or are

to be retained by, or Transferred to, any member of the 2seventy Group, including any and all cash and cash equivalents expressly assigned to 2seventy pursuant to Section 2.11;

(vi) any and all Assets reflected on either (a) the 2seventy Balance Sheet (including accounts receivable outstanding as of the Distribution Date but excluding cash and cash equivalents, the allocation of which shall be governed by Section 2.11) or (b) the accounting records supporting such balance sheet, subject to any dispositions of any of such Assets subsequent to the date of the 2seventy Balance Sheet; provided that the amounts set forth on the 2seventy Balance Sheet with respect to any Assets shall not be treated as minimum amounts or limitations on the amount of such Assets that are included in the definition of 2seventy Assets pursuant to this clause (vi);

(vii) any and all Assets acquired by or for any member of the 2seventy Group subsequent to the date of the 2seventy Balance Sheet which, had they been so acquired on or before such date and owned as of such date, would have been reflected on the 2seventy Balance Sheet if prepared on a consistent basis, subject to any dispositions of any of such Assets subsequent to the date of the 2seventy Balance Sheet, it being understood that the 2seventy Balance Sheet shall be used to determine the types of, and methodologies used to determine, those Assets that are included in the definition of 2seventy Assets pursuant to this clause (vii);

(viii) all rights, interests and claims of either Party or any of its Subsidiaries as of the Distribution Effective Time to the 2seventy Product Candidates, including all rights and claims of either Party or any of its Subsidiaries as of the Distribution Effective Time to all compound, discovery, development, in vitro and preclinical data; clinical study data; reports and analyses; product registrations and applications; and marketing registrations and applications (which shall include all United States Food and Drug Administration and other similar regulatory approvals and licenses related to, and all related applications and other information submitted for the purposes of or prepared in connection with obtaining the approval for, a 2seventy Product Candidate), to the extent related to the 2seventy Product Candidates;

(ix) all rights, interests and claims of either Party or any of its Subsidiaries as of the Distribution Effective Time to the 2seventy Discovery Programs, including all rights and claims of either Party or any of its Subsidiaries as of the Distribution Effective Time to all compound, discovery, development, in vitro and preclinical data, and reports and analyses, to the extent related to the 2seventy Discovery Programs;

(x) all Contracts to which either Party or any member of its Group is a party or by which it or any member of its Group or any of their respective Assets is bound, in each case, as of immediately prior to the Distribution Effective Time exclusively related to the Oncology Business and any rights or claims arising thereunder, including the Contracts listed on Schedule 1.1(2)(x);

(xi) the portion of any Shared Contract that relates to the Oncology Business;

(xii) all transferable licenses, permits, registrations, approvals, designations (including orphan drug designations) and authorizations of either Party or any of the members of its Group as of immediately prior to the Distribution Effective Time which have been issued by any Governmental Entity and which relate exclusively to, or are used exclusively in, the Oncology Business or the 2seventy Assets, and any rights or claims arising thereunder;

(xiii) all rights, claims, credits, causes of action or rights of set-off against Persons other than members of the bluebird Group relating exclusively to the Oncology Business or the 2seventy Assets, including the right to sue for past infringement arising before, on or after the Distribution Effective Time;

(xiv) to the extent in the possession of any member of the bluebird Group or the 2seventy Group immediately prior to the Distribution Effective Time (and other than Intellectual Property), whether in paper, microfilm, microfiche, computer tape or disc, magnetic tape, digitally or any other form, or stored on remote servers accessed from the internet, (A) all business records to the extent exclusively related to the 2seventy Assets or 2seventy Liabilities; (B) all of the separate financial and property Tax records of the members of the 2seventy Group that do not form part of the general ledger of any member of the bluebird Group; (C) all other books, records, ledgers, files, documents, correspondence, lists, plats, drawings, and photographs, including product literature, equipment test records, advertising and promotional materials, distribution lists, customer lists, supplier lists, studies, reports, operating, production and other manuals, manufacturing and quality control records and procedures, research and development files, regulatory filings, submissions and correspondence and other regulatory and compliance files, records and documents, and accounting and business books (including the accounting records prepared in connection with the preparation of 2seventy's financial information included in the Information Statement or any subsequent filings or financial periods through the Distribution Date), records, files, documentation and materials, in all cases to the extent exclusively related to the Oncology Business; (D) copies of any bluebird templates and form documents used in the operation of the Oncology Business; and (E) the information listed on Schedule 1.1(2)(xiv) (collectively, the "2seventy Records"); provided, however, that: (x) bluebird shall be entitled to retain a copy of any and all 2seventy Records; (y) bluebird shall be entitled to retain any materials in clauses (A) and (C) that are not reasonably practicable to identify and extract subject to the right of access pursuant to Section 7.3, as determined in bluebird's commercially reasonable discretion; and (z) bluebird shall be entitled to redact any portion of the 2seventy Records to the extent related to any matter other than the Oncology Business; provided, however, that such retained materials shall be deemed Confidential Information of 2seventy and subject to the provisions of Section 7.6;

(xv) all rights, interests and claims of either Party or any of its Subsidiaries as of the Distribution Effective Time to the Gene Editing Platform, including all rights and claims of either Party or any of its Subsidiaries as of the Distribution Effective Time to all on-target editing assays, functional bioassays, and off-target discovery and verification analytics, and reports and analyses, to the extent related to the Gene Editing Platform;

(xvi) the facilities and other real property listed or described on Schedule 1.1(2)(xvi) (the "Leased Real Property");

(xvii) all tangible equipment (including information technology, equipment and machinery), infrastructure, wires, supplies and other tangible property that is owned by, leased to or licensed to bluebird or any of its Subsidiaries immediately prior to the Distribution Effective Time and is either (x) located at the Leased Real Property (except for such property set forth on Schedule 1.1(2)(xvii) which shall be retained by the bluebird Group) or (y) exclusively related to the Oncology Business;

(xviii) any and all other Assets that relate exclusively to or are used exclusively in the Oncology Business or exclusively related to a 2seventy Asset that are held by the 2seventy Group or the bluebird Group immediately prior to the Distribution Effective Time; and

(xix) any and all other Assets that were inadvertently omitted or assigned that, had the Parties given specific consideration to such Assets as of the date of this Agreement, would have otherwise been classified as 2seventy Assets based on the principles set forth in this Section 1.1(2); provided that no Asset shall be a 2seventy Asset solely as a result of this clause (xix) unless a claim with respect thereto is made by 2seventy on or prior to the date that is the second anniversary of the Distribution Date. Notwithstanding the foregoing or anything to the contrary herein, "2seventy Asset" shall not include any rights or interests in or to any Intellectual Property except to the extent set forth in the foregoing clauses of this Section 1.1(2).

(3) "2seventy Balance Sheet" means the pro forma balance sheet of the 2seventy Group, including the notes thereto, as of June 30, 2021, as prepared in accordance with generally accepted accounting principles in the United States and Rule 11-02 of Regulation S-X, and included in the Information Statement.

(4) "2seventy Claim" shall have the meaning set forth in Section 6.2.

(5) "2seventy Common Stock" means the common stock, par value $0.0001 per share, of 2seventy.

(6) "2seventy Designees" means any and all entities (including corporations, general or limited partnerships, trusts, joint ventures, unincorporated organizations, limited liability entities or other entities) designated by 2seventy and that will be members of the 2seventy Group as of immediately prior to the Distribution Effective Time.

(7) "2seventy Discovery Programs" shall have the meaning set forth in Section 1.1(76).

(8) "2seventy Group" means (a) 2seventy and any entity that is a Subsidiary of 2seventy or will be a Subsidiary of 2seventy immediately following the Distribution Effective Time and (b) on and after the Distribution Effective Time, 2seventy and any entity that is a Subsidiary of 2seventy. For clarity, members of the 2seventy Group party to any Conveyancing and Assumption Instrument shall be a 2seventy Designee for purposes of this Agreement.

(9) "2seventy Indemnitees" means the members of the 2seventy Group and their respective past, present and future directors, officers, employees and agents, in each case in their respective capacities as such, each of the heirs, executors, administrators, successors and assigns of any of the foregoing.

(10) "2seventy Liabilities" means, without duplication, but in each case excluding the Excluded Liabilities:

(i) any and all Liabilities to the extent relating to, arising out of or resulting from the conduct of the Oncology Business, as conducted at any time, including prior to, at or after the Distribution Effective Time (including any such Liability to the extent relating to, arising out of or resulting from any act or failure to act by any director, officer, employee, agent or representative (whether or not such act or failure to act is or was within such Person's authority) of the 2seventy Group or the bluebird Group);

(ii) any and all Liabilities to the extent relating to, arising out of or resulting from the conduct of any business by any member of the 2seventy Group at any time after the Distribution Effective Time (including any such Liability to the extent relating to, arising out of or resulting from any act or failure to act by any director, officer, employee, agent or representative (whether or not such act or failure to act is or was within such Person's authority) of the 2seventy Group);

(iii) any and all Liabilities to the extent relating to, arising out of or resulting from any 2seventy Asset, whether arising before, on or after the Distribution Effective Time;

(iv) any and all Liabilities that are expressly contemplated by this Agreement or any Ancillary Agreement (or the Schedules hereto or thereto) as Liabilities to be Assumed or retired or satisfied by any member of the 2seventy Group;

(v) any and all Liabilities reflected on the 2seventy Balance Sheet or the accounting records supporting such balance sheet and any and all Liabilities incurred by or for 2seventy or any member of the 2seventy Group or bluebird Group subsequent to the date of the 2seventy Balance Sheet which, had they been so incurred on or before such date, would have been reflected on the 2seventy Balance Sheet if prepared on a consistent basis, subject to any discharge of any of such Liabilities subsequent to the date of the 2seventy Balance Sheet; it being understood that (A) the 2seventy Balance Sheet shall be used to determine the types of, and methodologies used to determine, those Liabilities that are included in the definition of 2seventy Liabilities pursuant to this clause (v); and (B) the amounts set forth on the 2seventy Balance Sheet with respect to any Liabilities shall not be treated as minimum amounts or limitations on the amount of such Liabilities that are included in the definition of 2seventy Liabilities pursuant to this clause (v);

(vi) any and all Liabilities to the extent relating to, arising out of or resulting from the development of 2seventy Product Candidates prior to the Distribution Effective Time by any member of the 2seventy Group or the bluebird Group;

(vii) the Liabilities listed or described on Schedule 1.1(10)(vii);

(viii) any and all Liabilities relating to, arising out of or resulting from any untrue statement or alleged untrue statement of a material fact or omission or alleged omission to state a material fact required to be stated therein or necessary to make the statement therein not misleading, with respect to all information contained in the Distribution Disclosure Documents, except to the extent specifically enumerated in clause (ii) of the definition of "Excluded Liabilities";

(ix) any and all Liabilities arising directly or indirectly from Actions to the extent relating to the 2seventy Assets, the Oncology Business or any 2seventy Liability, including in respect of any alleged tort, breach of Contract, violation or noncompliance with Law or any licenses, permits, registrations, approvals and authorizations, whether arising prior to, on or after the Distribution Date; and

(x) any and all other Liabilities that are held by the 2seventy Group or the bluebird Group immediately prior to the Distribution Effective Time that were inadvertently omitted or assigned that, had the Parties given specific consideration to such Liabilities as of the date of this Agreement, would have otherwise been classified as a 2seventy Liability based on the principles set forth in this Section 1.1(10); provided that no Liability shall be a 2seventy

Liability solely as a result of this clause (x) unless a claim with respect thereto is made by bluebird or 2seventy on or prior to the date that is the second anniversary of the Distribution Date.

(11) "2seventy Product Candidates" means the products and product candidates described on Schedule 1.1(11).

(12) "2seventy Records" shall have the meaning set forth in Section 1.1(2)(xiv).

(13) "2seventy Released Liabilities" shall have the meaning set forth in Section 6.1(a)(ii).

(14) "2seventy Trademarks" shall have the meaning set forth in Section 1.1(2)(iii).

(15) "2seventy Transition Services Agreement" means the Transition Services Agreement to be entered into by and between bluebird and 2seventy under which 2seventy will provide certain services to bluebird.

(16) "Action" means any demand, action, claim, suit, countersuit, arbitration, inquiry, subpoena, case, litigation, proceeding or investigation (whether civil, criminal, administrative or investigative) by or before any court or grand jury, any Governmental Entity or any arbitration or mediation tribunal.

(17) "Administrator" shall have the meaning set forth in Section 8.2(a).

(18) "Affiliate" means, when used with respect to a specified Person and at a point in, or with respect to a period of, time, a Person that directly or indirectly, through one or more intermediaries, controls, is controlled by, or is under common control with, such specified Person at such point in or during such period of time. For the purposes of this definition, "control", when used with respect to any specified Person means the possession, directly or indirectly, of the power to direct or cause the direction of the management and policies of such Person, whether through the ownership of voting securities or other interests, by Contract or otherwise. It is expressly agreed that no Party or member of its Group shall be deemed to be an Affiliate of the other Party or a member of such other Party's Group solely by reason of having common stockholders or one or more directors in common or by reason of having been under common control of bluebird prior to the Distribution Effective Time.

(19) "Agreement" shall have the meaning set forth in the Recitals.

(20) "Ancillary Agreements" means the Transaction Agreements other than this Agreement, all Conveyancing and Assumption Instruments and any and all other agreements entered into by the Parties or members of their respective Groups (but as to which no Third Party

is a party) in connection with the Separation or the other transactions contemplated by the Transaction Agreements.

(21) "Arbitrators" shall have the meaning set forth in Section 8.2(a).

(22) "Assets" means all rights, title and ownership interests in and to all rights, properties, claims, Contracts, businesses, or assets (including goodwill), wherever located (including in the possession of vendors or other Third Parties or elsewhere), of every kind, character and description, whether real, personal or mixed, tangible or intangible, whether accrued, contingent or otherwise, in each case, whether or not recorded or reflected on the books and records or financial statements of any Person. Except as otherwise specifically set forth herein or in the Tax Matters Agreement, the rights and obligations of the Parties with respect to Taxes shall be governed by the Tax Matters Agreement and, therefore, Taxes (including any Tax items, attributes or rights to receive any Tax Refunds (as defined in the Tax Matters Agreement)) shall not be treated as Assets governed by this Agreement.

(23) "Assume" and "Assumption" shall have the respective meanings set forth in Section 2.2(a)(iii).

(24) "bluebird" shall have the meaning set forth in the Recitals.

(25) "bluebird Claim" shall have the meaning set forth in Section 6.3.

(26) "bluebird Common Stock" means the common stock, par value $0.01 per share, of bluebird.

(27) "bluebird Designees" shall mean any and all entities (including corporations, general or limited partnerships, trusts, joint ventures, unincorporated organizations, limited liability companies or other entities) designated by bluebird and that will be members of the bluebird Group as of immediately prior to the Distribution Effective Time. For clarity, members of the bluebird Group party to any Conveyancing and Assumption Instrument shall be a bluebird Designee for purposes of this Agreement.

(28) "bluebird Group" means (a) prior to the Distribution Effective Time, bluebird and each entity that will be a Subsidiary of bluebird immediately following the Distribution Effective Time and (b) from and after the Distribution Effective Time, bluebird and each entity that is a Subsidiary of bluebird.

(29) "bluebird Indemnitees" means the members of the bluebird Group and their respective past, present and future directors, officers, employees and agents, in each case in their respective capacities as such, and each of the heirs, executors, administrators, successors and assigns of any of the foregoing.

(30) "bluebird Released Liabilities" shall have the meaning set forth in Section 6.1(a)(i).

(31) "bluebird Retained Assets" means (i) any and all Assets of bluebird or any of its Subsidiaries that are not 2seventy Assets and, after the Distribution Effective Time, any and all Assets that are acquired or otherwise become Assets of any member of the bluebird Group and (ii) any Assets that are held by the 2seventy Group or the bluebird Group immediately prior to the Distribution Effective Time not exclusively related to the Oncology Business that were inadvertently omitted or assigned that, had the Parties given specific consideration to such Assets as of the date of this Agreement, would have otherwise been classified as a bluebird Retained Asset based on the principles set forth in this Section 1.1(31); provided that no Asset shall be a bluebird Retained Asset solely as a result of this clause (ii) unless a claim with respect thereto is made by bluebird on or prior to the date that is the second anniversary of the Distribution Date. For clarity, bluebird Retained Assets shall include all Excluded Assets.

(32) "bluebird Retained Liabilities" means (i) all Liabilities of bluebird or any of its Subsidiaries that are not 2seventy Liabilities, and, after the Distribution Effective Time, all Liabilities of each member of the bluebird Group and (ii) any and all other Liabilities of bluebird or any of its Subsidiaries immediately prior to the Distribution Effective Time that were inadvertently omitted or assigned that, had the Parties given specific consideration to such Liabilities as of the date of this Agreement, would have otherwise been classified as a bluebird Retained Liability based on the principles set forth in this Section 1.1(32); provided that no Liability shall be a bluebird Retained Liability solely as a result of this clause (ii) unless a claim with respect thereto is made by bluebird or 2seventy on or prior to the date that is the second anniversary of the Distribution Date. For clarity, bluebird Retained Liabilities shall include all Excluded Liabilities.

(33) "bluebird Transition Services Agreement" means the Transition Services Agreement to be entered into by and between bluebird and 2seventy under which bluebird will provide certain services to 2seventy.

(34) "Board" shall have the meaning set forth in the Recitals.

(35) "Business Day" means any day other than Saturday or Sunday and any other day on which commercial banking institutions located in Boston, Massachusetts or New York, New York are required, or authorized by Law, to remain closed.

(36) "Claiming Party" shall have the meaning set forth in Section 6.4(b).

(37) "Code" shall have the meaning set forth in the Tax Matters Agreement.

(38) "Commission" means the U.S. Securities and Exchange Commission.

(39) "Confidential Information" means, with respect to a Party, all confidential or proprietary information to the extent concerning: (i) such Party or any of its Subsidiaries, (ii) the Oncology Business, any 2seventy Assets or any 2seventy Liabilities and (iii) the Severe Genetic Disease Business, any bluebird Retained Assets or any bluebird Retained Liabilities, in each case of clauses (i), (ii) and (iii) including any such information furnished pursuant to Article VII or otherwise pursuant to this Agreement or any Ancillary Agreement; provided, however, that "Confidential Information" shall not include any information that is (i) in the public domain or known to the public through no fault of the receiving Party or any of its Subsidiaries, (ii) lawfully acquired after the Distribution Effective Time by the receiving Party or any of its Subsidiaries from Third Parties not known to be subject to confidentiality obligations with respect to such information or (iii) independently developed by the receiving Party or any of its Subsidiaries after the Distribution Effective Time without reference to any Confidential Information of the disclosing Party or any of its Subsidiaries. For the avoidance of doubt, subject to the foregoing proviso, (x) any information that 2seventy receives from any Third Party to a Third Party Agreement retained by any member of the bluebird Group (or that is a Shared Contract) regarding bluebird's technology, products, business or objectives shall be deemed to be Confidential Information of bluebird, and (y) any information that bluebird receives from any Third Party to a Third Party Agreement assigned to any member of the 2seventy Group (or that is a Shared Contract) regarding 2seventy's technology, products, business or objectives shall be deemed to be Confidential Information of 2seventy. All confidential or proprietary information to the extent concerning the Oncology Business, any 2seventy Assets or any 2seventy Liabilities is hereby deemed to be part of 2seventy's, but not bluebird's, Confidential Information. All confidential or proprietary information to the extent concerning the Severe Genetic Disease Business, any bluebird Retained Assets or any bluebird Retained Liabilities is hereby deemed to be part of bluebird's, but not 2seventy's, Confidential Information.

(40) "Consents" means any consents, waivers, notices, reports or other filings to be obtained from or made, including with respect to any Contract, or any registrations, licenses, permits, authorizations to be obtained from, or approvals from, or notification requirements to, any Third Parties, including any Governmental Entity.

(41) "Contract" means any agreement, contract, subcontract, obligation, binding understanding, note, indenture, instrument, option, lease, promise, arrangement, release, warranty, license, sublicense, insurance policy, benefit plan, purchase order or legally binding commitment or undertaking of any nature (whether written or oral and whether express or implied).

(42) "Conveyancing and Assumption Instruments" means, collectively, the various Contracts (other than any Transaction Agreement) by and between or among any member(s) of the bluebird Group, on the one hand, and any member(s) of the 2seventy Group, on the other

hand, including related local asset transfer agreements or intellectual property assignment agreements and other documents entered into prior to the Distribution Effective Time and to be entered into, in each case to effect the Transfer of Assets and the Assumption of Liabilities in the manner contemplated by the Transaction Agreements, in such form or forms as the applicable parties thereto agree.

(43) "Copyrights" shall have the meaning set forth in Section 1.1(67)(iii).

(44) "Direct Claim" shall have the meaning set forth in Section 6.4(a)(ii).

(45) "Dispute Notice" shall have the meaning set forth in Section 8.1.

(46) "Disputes" shall have the meaning set forth in Section 8.1.

(47) "Distribution" shall have the meaning set forth in the Recitals.

(48) "Distribution Agent" means American Stock Transfer & Trust Company.

(49) "Distribution Date" means the date, as shall be determined by the Board, on which the Distribution occurs.

(50) "Distribution Disclosure Documents" means the Form 10 and all exhibits thereto (including the Information Statement), any current reports on Form 8-K and the registration statement on Form S-8 related to securities to be offered under 2seventy's employee benefit plans, in each case as filed or furnished by 2seventy with or to the Commission in connection with the Distribution and including any amendments or supplements thereto.

(51) "Distribution Effective Time" means 12:01 a.m., Eastern time, on the Distribution Date.

(52) "Distribution Ratio" means one (1) share of 2seventy Common Stock for every three (3) shares of bluebird Common Stock.

(53) "Employee Matters Agreement" means the Employee Matters Agreement to be entered into by and between bluebird and 2seventy.

(54) "Exchange Act" means the Securities Exchange Act of 1934.

(55) "Excluded Assets" means: (i) the Assets listed or described on Schedule 1.1(55); (ii) all cash and cash equivalents, except to the extent expressly assigned to the 2seventy Group pursuant to Section 2.11; (iii) subject to the rights of the 2seventy Group pursuant to Article IX, all Policies binders and claims and rights thereunder and all prepaid insurance premiums (other than any insurance policies acquired prior to the Distribution Effective Time directly by and in the name of 2seventy or a member of the 2seventy Group); (iv) any and all work papers of bluebird's auditors, excluding the accounting records prepared in connection with the preparation

of 2seventy's financial information included in the Information Statement or any subsequent filings or financial periods through the Distribution Date, and any other Tax records (including accounting records, other than the accounting records prepared in connection with the preparation of the financial information included in the Information Statement or any subsequent filings or financial periods through the Distribution Date) of any bluebird Group member (which will be addressed in the Tax Matters Agreement), excluding all bluebird templates and form documents used in the operation of the Oncology Business; and (v) any and all Assets that are expressly contemplated by this Agreement or any Ancillary Agreement (or the Schedules hereto or thereto) as Assets which have been or are to be retained by, or Transferred to, any member of the bluebird Group.

(56) "Excluded Liabilities" means (i) the Liabilities listed or described on Schedule 1.1(56)(i); (ii) with respect to all information contained in the Distribution Disclosure Documents, any and all Liabilities relating to, arising out of or resulting from any untrue statement or alleged untrue statement of a material fact or omission or alleged omission to state a material fact required to be stated therein or necessary to make the statement therein not misleading described in the sections of the Distribution Disclosure Documents referenced on Schedule 1.1(56)(ii); and (iii) any and all Liabilities to the extent expressly contemplated by this Agreement or by any Ancillary Agreement (or the Schedules hereto or thereto) as Liabilities to be Assumed or discharged by any member of the bluebird Group.

(57) "Form 10" means the registration statement on Form 10 (File Number: 001-40791) filed by 2seventy with the Commission under the Exchange Act in connection with the Distribution, including any amendment or supplement thereto.

(58) "Gene Editing Platform" shall have the meaning set forth in Section 1.1(76)(iii).

(59) "Governmental Entity" means any nation or government, any state, municipality or other political subdivision thereof and any entity, body, agency, commission, department, board, bureau or court, whether domestic, foreign, multinational, or supranational exercising executive, legislative, judicial, regulatory, self-regulatory or administrative functions of or pertaining to government, including NASDAQ and any similar self-regulatory body under applicable securities Laws.

(60) "Group" means (a) with respect to bluebird, the bluebird Group and (b) with respect to 2seventy, the 2seventy Group, as the context requires.

(61) "Indemnifiable Losses" means any and all Liabilities, including damages, losses, obligations, penalties, judgments, settlements, claims, payments, fines and other costs and expenses (but excluding consequential, indirect, punitive, exemplary, remote, speculative or similar damages, except (i) to the extent paid to a Third Party or (ii) consequential or similar

damages resulting from a breach of Article VII) of any and all Actions and demands, assessments, judgments, settlements and compromises relating thereto and the reasonable fees and expenses of attorneys, accountants, consultants and other professionals incurred in the investigation or defense thereof or the enforcement of rights hereunder.

(62) "Indemnifying Party" means, with respect to any Direct Claim or Third Party Claim, the Party which is or may be required pursuant to Article VI to provide indemnification pursuant to such claim.

(63) "Indemnitee" means, with respect to any Direct Claim or Third Party Claim, the bluebird Indemnitee or 2seventy Indemnitee, as the case may be, that may be entitled to indemnification hereunder with respect to such claim.

(64) "Indemnity Payment" shall have the meaning set forth in Section 6.5(a).

(65) "Information Statement" means the Information Statement attached as Exhibit 99.1 to the Form 10, to be distributed or made available to the holders of shares of bluebird Common Stock in connection with the Distribution, including any amendment or supplement thereto.

(66) "Insurance Proceeds" means those monies (a) received by an insured from a Third Party insurance carrier or (b) paid by a Third Party insurance carrier on behalf of an insured, in either case net of any applicable deductible or retention.

(67) "Intellectual Property" means all intellectual property, whether registered or unregistered and whether granted, pending or expired, of every kind and description throughout the world, including all U.S. and non-U.S.:

(i) trademarks, trade dress, service marks, certification marks, common law trademarks and service marks, logos, slogans, designs, names, corporate names, and trade names, together with the goodwill symbolized by any of the foregoing (collectively, "Trademarks");

(ii) patents and patent applications, and any and all related national or international counterparts thereto and utility models, including any provisionals, divisionals, continuations, continuations-in-part, reissues, reexaminations, substitutions and extensions thereof (including supplementary protection certificates) (collectively, "Patents");

(iii) copyrights and copyrightable subject matter, excluding Know-How (collectively, "Copyrights");

(iv) internet domain names, social media accounts and addresses and other similar designations of source or origin;

(v) rights in software and computer systems;

(vi) all applications and registrations for the foregoing;

(vii) trade secrets, and all other confidential or proprietary information, know-how, clinical data, non-clinical data, pre-clinical data, in vitro data, inventions, processes, formulae and methodologies, excluding Patents (collectively, "Know-How"); and

(viii) all rights and remedies against past, present, and future infringement, misappropriation, or other violation thereof.

(68) "Intercompany Account" means any receivable, payable or loan between any member of the bluebird Group, on the one hand, and any member of the 2seventy Group, on the other hand, except for any such receivable, payable or loan that arises pursuant to this Agreement or any Ancillary Agreement.

(69) "IP License Agreement" means the Intellectual Property License Agreement to be entered into by and between bluebird and 2seventy.

(70) "Know-How" shall have the meaning set forth in Section 1.1(67)(vii).

(71) "Known Counsel" shall have the meaning set forth in Section 7.8.

(72) "Law" means any applicable U.S. or non-U.S. federal, national, supranational, state, provincial, local or similar statute, law, ordinance, regulation, rule, code, income tax treaty, order, requirement or rule of law (including common law) or other binding directives promulgated, issued, entered into or taken by any Governmental Entity.

(73) "Leased Real Property" shall have the meaning set forth in Section 1.1(2)(xvi).

(74) "Liabilities" means any and all indebtedness, liabilities, costs, expenses, interest and obligations, whether accrued or fixed, absolute or contingent, matured or unmatured, known or unknown, reserved or unreserved, or determined or determinable, including those arising under any Law, Action, or in connection with any dispute, whether asserted or unasserted, or order, writ, judgment, injunction, decree, stipulation, determination or award entered by or with any Governmental Entity and those arising under any Contract or any fines, damages or equitable relief which may be imposed and including all costs and expenses related thereto. Except as otherwise specifically set forth herein or in the Tax Matters Agreement, the rights and obligations of the Parties with respect to Taxes shall be governed by the Tax Matters Agreement and, therefore, Taxes shall not be treated as Liabilities governed by this Agreement.

(75) "NASDAQ" means the Nasdaq Stock Market LLC.

(76) "Oncology Business" means: (i) the business, operations and activities conducted at any time prior to the Distribution Effective Time by or on behalf of either Party or any of its Subsidiaries to the extent relating to, arising out of or resulting from the 2seventy Product Candidates (including the discovery, research, development, commercialization, marketing and/or sale of such 2seventy Product Candidates worldwide); (ii) the business, operations and activities conducted at any time prior to the Distribution Effective Time by or on behalf of either Party or any of its Subsidiaries to the extent related to (A) the discovery, research and development projects listed and described on Schedule 1.1(76)(ii)(A) or (B) any platform programs of the Parties or any of their respective Subsidiaries exclusively related to, or useful in, oncology indications, including the programs listed and described on Schedule 1.1(76)(ii)(B), including the operations and activities of any member of the 2seventy Group conducted prior to the Distribution Effective Time relating to the foregoing (such business, operations and activities referred to in this clause (ii), "2seventy Discovery Programs"); and (iii) the business, operations and activities conducted at any time prior to the Distribution Effective Time by or on behalf of either Party or any of its Subsidiaries to the extent related to the megaTAL gene editing platform of the Parties and their respective Subsidiaries, including the operations and activities of any member of the 2seventy Group conducted prior to the Distribution Date relating to the foregoing (such business, operations and activities referred to in this clause (iii), the "Gene Editing Platform").

(77) "Patents" shall have the meaning set forth in Section 1.1(67)(ii).

(78) "Person" means an individual, a general or limited partnership, a corporation, a trust, a joint venture, an unincorporated organization, a limited liability entity, any other entity and any Governmental Entity.

(79) "Policies" means insurance policies and insurance contracts of any kind (other than life and benefits policies or contracts), including primary, excess and umbrella policies, commercial general liability policies, fiduciary liability, directors and officers liability, product liability, automobile, property and casualty, workers' compensation and employee dishonesty insurance policies and bonds, together with the rights, benefits and privileges thereunder.

(80) "Prime Rate" means the "prime rate" as published in *The Wall Street Journal*, Eastern Edition.

(81) "Privilege" means all privileges, immunities or other protections from disclosure which may be asserted under applicable Law, including attorney-client privilege, business strategy privilege, joint defense privilege, common interest privilege and protection under the work-product doctrine.

(82) "Privileged Information" means information subject to Privilege.

(83) "Record Date" means October 19, 2021, as determined by the Board as the record date for determining the holders of record of bluebird Common Stock entitled to receive 2seventy Common Stock in the Distribution.

(84) "Record Holders" means the holders of record of bluebird Common Stock as of the Record Date.

(85) "Representatives" means with respect to any Person, any of such Person's directors, officers, employees, agents, consultants, advisors, accountants, attorneys or other representatives.

(86) "Retained Names and Marks" shall have the meaning set forth in Section 5.3.

(87) "Securities Act" means the Securities Act of 1933.

(88) "Security Interest" means any mortgage, security interest, pledge, lien, charge, claim, option, right to acquire, voting or other restriction, right-of-entry, covenant, condition, easement, encroachment, restriction on transfer, or other encumbrance of any nature whatsoever, excluding restrictions on transfer under securities Laws.

(89) "Separation" shall have the meaning set forth in the Recitals.

(90) "Severe Genetic Disease Business" means those businesses, operations and activities of bluebird or any of its Subsidiaries (whether or not such businesses, operations or activities are or have been terminated, divested or discontinued) other than the Oncology Business and, after the Distribution Effective Time, those entities or businesses acquired or established by or for any member of the bluebird Group.

(91) "Shared Contract" means the Contracts listed or described on Schedule 1.1(91).

(92) "Shared Privileged Information" shall have the meaning set forth in Section 7.7(b).

(93) "Subsidiary" means with respect to any Person (i) a corporation, fifty percent (50%) or more of the voting or capital stock of which is, as of the time in question, directly or indirectly owned by such Person and (ii) any other Person in which such Person, directly or indirectly, owns fifty percent (50%) or more of the equity or economic interest thereof or has the power to elect or direct the election of fifty percent (50%) or more of the members of the governing body of such Person.

(94) "Tax" or "Taxes" has the meaning set forth in the Tax Matters Agreement.

(95) "Tax Contest" has the meaning as set forth in the Tax Matters Agreement.

(96) "Tax Matters Agreement" means the Tax Matters Agreement to be entered into by and between bluebird and 2seventy.

(97) "Tax Returns" has the meaning set forth in the Tax Matters Agreement.

(98) "Third Party" means any Person other than the Parties or any of their respective Subsidiaries.

(99) "Third Party Agreements" means any Contract between or among a Party (or any member of its Group) and any Third Party (it being understood that to the extent that the rights and obligations of the Parties and the members of their respective Groups under any such Contracts constitute 2seventy Assets or 2seventy Liabilities, or bluebird Retained Assets or bluebird Retained Liabilities, such Contracts shall be assigned or retained pursuant to Article II).

(100) "Third Party Claim" shall have the meaning set forth in Section 6.4(b).

(101) "Third Party Proceeds" shall have the meaning set forth in Section 6.5(a).

(102) "Trademarks" shall have the meaning set forth in Section 1.1(67)(i).

(103) "Transaction Agreement" means any of this Agreement, the Employee Matters Agreement, the IP License Agreement, the Tax Matters Agreement and the Transition Services Agreements.

(104) "Transfer" has the meaning set forth in Section 2.2(a)(i).

(105) "Transition Services Agreements" means, collectively, the 2seventy Transition Services Agreement and the bluebird Transition Services Agreement, and each, individually, a "Transition Services Agreement."

Section 1.2 References; Interpretation.

(1) References in this Agreement to any gender include references to all genders, and terms defined in the singular shall have a comparable meaning when used in the plural and vice versa.

(2) Unless the context otherwise requires, the words "include", "includes" and "including" when used in this Agreement shall be deemed to be followed by the phrase "without limitation".

(3) Unless the context otherwise requires, references in this Agreement to Articles, Sections, Exhibits and Schedules shall be deemed references to Articles and Sections of, and Exhibits and Schedules to, this Agreement, as the same may be amended as provided herein.

(4) Unless the context otherwise requires, the words “hereof”, “hereby,” “herein” and “hereunder” and words of similar meaning when used in this Agreement refer to this Agreement in its entirety and not to any particular Article, Section or provision of this Agreement.

(5) The term “extent” in the phrase “to the extent” when used in this Agreement refers to the degree to which a subject or other thing extends, and such phrase does not mean simply “if.”

(6) When a reference is made to an agreement, instrument or other document, such reference shall include any exhibit, schedule or annex to such agreement, instrument or other document.

(7) References to a document being in “agreed form” shall mean that it is in a form agreed by the Parties and signed for purpose of identification by or on behalf of the Parties, with such alterations as may be agreed between the Parties from time to time.

(8) Unless the context otherwise requires, where either Party’s approval or consent is required hereunder, such Party’s approval or consent shall be a prior consent, shall be in writing (including email) and shall not be unreasonably denied, delayed or conditioned.

(9) The word “will” when used in this Agreement shall be construed to have the same meaning as the word “shall”.

(10) The words “written request” when used in this Agreement shall include email.

(11) Reference in this Agreement to any time shall be to Eastern time unless otherwise expressly provided herein.

(12) Unless the context requires otherwise, references in this Agreement to “bluebird” shall also be deemed to refer to the applicable member of the bluebird Group, references to “2seventy” shall also be deemed to refer to the applicable member of the 2seventy Group and, in connection therewith, any references to actions or omissions to be taken, or refrained from being taken, as the case may be, by bluebird or 2seventy shall be deemed to require bluebird or 2seventy, as the case may be, to cause the applicable members of the bluebird Group or the 2seventy Group, respectively, to take, or refrain from taking, any such action.

(13) The word “or” shall not be exclusive.

(14) References to any “statute” or “regulation” are to such statute or regulation as amended, modified, supplemented or replaced from time to time (and, in the case of any statute, include any rules and regulations promulgated under such statute) and to any “section of any statute or regulation” include any successor to such section. References to any Governmental

Entity include any successor to such Governmental Entity, and references to any Affiliate include any successor to such Affiliate.

(15) Whenever the last day for the exercise of any right or the discharge of any duty under this Agreement falls on other than a Business Day, the Party having such right or duty shall have until the next Business Day to exercise such right or discharge such duty.

(16) Unless otherwise indicated, the word "day" shall be interpreted as a calendar day.

ARTICLE II
THE SEPARATION

Section 2.1 General. Pursuant and subject to the terms and conditions of this Agreement, the Parties shall use, and shall cause their respective Subsidiaries to use, commercially reasonable efforts to consummate the transactions contemplated hereby, a portion of which may have already been implemented prior to the date hereof.

Section 2.2 Transfer of Assets; Assumption of Liabilities.

(a) Unless otherwise provided in this Agreement or in any Ancillary Agreement:

(i) bluebird shall, and shall cause its Subsidiaries to, contribute, assign, transfer, convey and deliver ("Transfer") to 2seventy or its designee, and 2seventy or its designee shall assume and accept from bluebird and its Subsidiaries, all of their direct or indirect right, title and interest in, to and under all 2seventy Assets; and

(ii) 2seventy shall Transfer to bluebird, and bluebird shall assume and accept from 2seventy, all of 2seventy's direct or indirect right, title and interest in, to and under all bluebird Retained Assets held by 2seventy or a member of the 2seventy Group.

(iii) Without limiting the obligations of either Party under Article VI, effective at and from and after the Distribution Effective Time, (i) bluebird hereby accepts, assumes (or, as applicable, retains) and shall perform, discharge and fulfill, in accordance with their respective terms ("Assume"; and "Assumption" shall have the correlative meaning), all of the bluebird Retained Liabilities and (ii) 2seventy hereby Assumes all of the 2seventy Liabilities, in each case regardless of (A) when or where such Liabilities arose or arise, (B) where or against whom such Liabilities are asserted or determined, (C) whether such Liabilities arise from or are alleged to arise from negligence, gross negligence, recklessness, violation of law, willful misconduct, bad faith, fraud or misrepresentation by any member of the bluebird Group or the 2seventy Group, as the case may be, or any of their past or present respective directors, officers, employees, or agents, (D) which entity is named in any action associated with any Liability and

(E) whether the facts on which such Liabilities are based occurred prior to, on or after the date hereof.

(b) The Parties shall use their respective commercially reasonable efforts to obtain the Consents required to Transfer any Contracts, licenses, permits, authorizations and other Assets as contemplated by this Agreement. Notwithstanding anything herein to the contrary, no Contract or other Asset shall be Transferred if it would violate applicable Law or, in the case of a Contract, the rights of any Third Party to such Contract; provided that Section 2.6, to the extent provided therein, shall apply to such Asset or Contract.

(c) It is understood and agreed by the Parties that certain of the Transfers or Assumptions referenced in Section 2.2(a) have heretofore occurred and, as a result, no additional Transfers or Assumptions by any member of the bluebird Group or 2seventy Group, as applicable, shall be deemed to occur upon the execution of this Agreement with respect thereto. Moreover, to the extent that any member of the bluebird Group or 2seventy Group, as applicable, is liable for any bluebird Retained Liability or 2seventy Liability, respectively, by operation of Law immediately following any Transfer in accordance with this Agreement or any Conveyancing and Assumption Instruments, there shall be no need for any other member of the bluebird Group or 2seventy Group, as applicable, to Assume such Liability in connection with the operation of Section 2.2(a) and, accordingly, no other member of such Group shall Assume such Liability in connection with Section 2.2(a).

(d) In connection with, and in furtherance of, the Transfers of Assets and the Assumptions of Liabilities contemplated by this Agreement, the Parties shall execute or cause to be executed, on or after the date hereof by the appropriate entities to the extent not executed prior to the date hereof, any Conveyancing and Assumption Instruments necessary to evidence the valid Transfer to the applicable Party or member of such Party's Group of all right, title and interest in and to its accepted Assets and the valid and effective Assumption by the applicable Party or member of such Party's Group of its respective Liabilities for Transfers and Assumptions to be effected pursuant to Delaware Law, Massachusetts Law or the Laws of one of the other states of the United States or, if not appropriate for a given Transfer or Assumption, and for Transfers or Assumptions to be effected pursuant to non-U.S. Laws, in such form as the Parties shall reasonably agree.

(e) bluebird hereby waives compliance by itself and each and every member of the bluebird Group with the requirements and provisions of any "bulk-sale" or "bulk transfer" Laws of any jurisdiction that may otherwise be applicable with respect to the transfer or sale of any or all of the bluebird Retained Assets to bluebird or any member of the bluebird Group.

(f) 2seventy hereby waives compliance by itself and each and every member of the 2seventy Group with the requirements and provisions of any "bulk-sale" or "bulk transfer"

Laws of any jurisdiction that may otherwise be applicable with respect to the transfer or sale of any or all of the 2seventy Assets to 2seventy or any member of the 2seventy Group.

(g) Notwithstanding anything in this Section 2.2 to the contrary, no bluebird Group member shall be required to undertake any action or arrangement contemplated by this Section 2.2 that would result in, or could reasonably be expected to result in, Tax treatment that is inconsistent with the conclusions set forth in the private letter ruling or opinion referenced in Section 4.5(d).

Section 2.3 Treatment of Shared Contracts.

(a) Unless the Parties otherwise agree or the benefits of any Contract described in this Section 2.3 are expressly conveyed to the applicable Party pursuant to an Ancillary Agreement, in the case of a Shared Contract, the Parties shall use commercially reasonable efforts to cause such Shared Contract to be: (i) assigned in relevant part to a member of the 2seventy Group (or to a member of the bluebird Group if the contracting party is a member of the 2seventy Group) if so assignable; (ii) appropriately amended, prior to, on or after the Distribution Effective Time; or (iii) replaced or otherwise addressed with suitable arrangements, in each case so that each Party or its respective Subsidiaries shall be entitled to the rights and benefits and shall assume the related portion of any obligations and Liabilities inuring to their respective businesses; provided, however, that in no event shall either Party or its respective Subsidiaries be required to assign or amend any Shared Contract in its entirety or to assign a portion of any Shared Contract that is not assignable or cannot be amended by its terms (including any terms imposing Consents or conditions on an assignment where such Consents or conditions have not been obtained or fulfilled). If any Shared Contract cannot be so partially assigned, or cannot be amended, or if such assignment or amendment would impair the benefit the parties thereto derive from such Shared Contract and such Shared Contract is not replaced or otherwise addressed with suitable arrangements, bluebird and 2seventy shall, and shall cause each member of their respective Groups to, take such other reasonable and permissible actions to cause (with the costs and expenses of any such actions following the Separation to be shared equally between the Parties): (A) the Assets associated with that portion of each Shared Contract that relates to the Oncology Business to be enjoyed by a member of the 2seventy Group; (B) the Liabilities associated with that portion of each Shared Contract that relates to the Oncology Business to be borne by a member of the 2seventy Group; (C) the Assets associated with that portion of each Shared Contract that relates to the Severe Genetic Disease Business to be enjoyed by a member of the bluebird Group; and (D) the Liabilities associated with that portion of each Shared Contract that relates to the Severe Genetic Disease Business to be borne by a member of the bluebird Group.

(b) Except for payments required in accordance with the performance of the applicable Shared Contract, nothing in this Section 2.3 shall obligate either Party or any member

of its Group to make any payment, incur any Liability or offer or grant any accommodation for the benefit of the other Party or any member of the other Party's Group, in each case, in order to effect any transaction (other than the pass-through of rewards and burdens of the applicable portions of the Shared Contracts in accordance with this Section 2.3) (except to the extent advanced, assumed or agreed in advance to be reimbursed by the other Party or any member of the other Party's Group).

(c) Each of bluebird and 2seventy shall, and shall cause the members of its Group to, (A) treat for all Tax purposes the portion of each Shared Contract inuring to its respective businesses as Assets owned by, and/or Liabilities of, as applicable, such Party as of the Distribution Effective Time and (B) neither report nor take any Tax position (on a Tax Return or otherwise) inconsistent with such treatment (unless required by a change in applicable Tax Law or good faith resolution of a Tax Contest).

Section 2.4 Intercompany Accounts. Each Intercompany Account which exists and is reflected immediately prior to the Distribution Effective Time in any general ledger account or other records of bluebird, 2seventy or any of their respective Affiliates, shall be: (a) closed as of the Distribution Effective Time and satisfied or settled within thirty (30) days following the Distribution Date by the relevant members of the bluebird Group and the 2seventy Group by (i) one or a related series of distributions of or contributions to capital, (ii) payment by the relevant obligor to the relevant obligee or (iii) dividends or a combination of the foregoing, in each case as determined by bluebird or (b) otherwise terminated effective as of the Distribution Effective Time. The parties hereby agree that the Intercompany Accounts shall be settled, as applicable, as described on Schedule 2.4. For the avoidance of doubt, the obligation to satisfy, settle or terminate Intercompany Accounts shall survive the Distribution Effective Time.

Section 2.5 Limitation of Liability. Except as provided in this Section 2.5 and in Article VI, neither bluebird nor 2seventy nor any member of their respective Groups shall have any Liability to the other or any member of the other Party's Group based upon, arising out of or resulting from any agreement, arrangement, course of dealing or understanding existing on or prior to the Distribution Effective Time other than pursuant to (i) this Agreement or any Ancillary Agreement, (ii) any Contract or arrangement listed or described on Schedule 2.5, (iii) any Third Party Agreement, or (iv) any other Contract or agreement entered into in connection with the consummation of the transactions contemplated by the Transaction Agreements, and any such Liability, whether or not in writing, that is not reflected in any of the foregoing, is hereby irrevocably cancelled, released and waived effective as of the Distribution Effective Time. No such terminated agreement, arrangement, course of dealing or understanding (including any provision thereof that purports to survive termination) shall be of any further force or effect after the Distribution Effective Time.

Section 2.6 Transfers Not Effected at or Prior to the Distribution Effective Time; Transfers Deemed Effective as of the Distribution Effective Time.

(a) If and to the extent that the valid, complete and perfected Transfer to the 2seventy Group of any 2seventy Asset or Assumption by the 2seventy Group of any 2seventy Liability, in each case contemplated hereby, would be a violation of applicable Law or require any Consent in connection with the Separation that has not been obtained or made by the Distribution Effective Time then, unless the Parties mutually shall otherwise agree, the Transfer to the 2seventy Group of such 2seventy Assets or the Assumption by the 2seventy Group of such 2seventy Liabilities, as the case may be, shall be automatically deemed deferred and any such purported Transfer or Assumption shall be null and void until such time as all legal impediments are removed or such Consent has been obtained or made. Notwithstanding the foregoing, any such 2seventy Asset or 2seventy Liability shall continue to constitute a 2seventy Asset or 2seventy Liability, as applicable, for all other purposes of this Agreement.

(b) If and to the extent that the valid, complete and perfected Transfer to the bluebird Group of any bluebird Retained Asset or Assumption by the bluebird Group of any bluebird Retained Liability, in each case contemplated hereby, would be a violation of applicable Law or require any Consent in connection with the Separation that has not been obtained or made by the Distribution Effective Time then, unless the Parties mutually shall otherwise agree, the Transfer to the bluebird Group of such bluebird Retained Assets or the Assumption by the bluebird Group of such bluebird Retained Liabilities, as the case may be, shall be automatically deemed deferred and any such purported Transfer or Assumption shall be null and void until such time as all legal impediments are removed or such Consent has been obtained or made. Notwithstanding the foregoing, any such bluebird Retained Assets or bluebird Retained Liabilities shall continue to constitute bluebird Retained Assets and bluebird Retained Liabilities for all other purposes of this Agreement.

(c) With respect to Assets and Liabilities described in Section 2.6(a) and Section 2.6(b), taking into account any applicable restrictions or considerations relating to the contemplated Tax treatment of the transactions contemplated hereby, each of bluebird and 2seventy shall, and shall cause the members of its respective Group to, (i) treat for all Tax purposes (A) the deferred Assets as assets having been Transferred to and owned by the Person entitled to such Assets not later than the Distribution Effective Time and (B) the deferred Liabilities as having been Assumed by the Person intended to be subject to such Liabilities not later than the Distribution Effective Time and (ii) neither report nor take any Tax position (on a Tax Return or otherwise) inconsistent with such treatment (unless required by a change in applicable Tax Law or good faith resolution of a Tax Contest).

(d) In the event that any Transfer of Assets or Assumption of Liabilities intended to be effected hereunder has not been consummated at or prior to the Distribution

Effective Time, whether as a result of the provisions of Section 2.6(a) or Section 2.6(b) or for any other reason (other than with respect to Shared Contracts, which shall be governed solely by Section 2.3):

(i) unless the Parties shall otherwise agree, the Parties and their respective Group members shall cooperate and use commercially reasonable efforts to seek to obtain, in accordance with applicable Law, any necessary Consents for the Transfer of all Assets and the Assumption of all Liabilities contemplated to be Transferred or Assumed, as applicable, pursuant to this Article II to the fullest extent permitted by applicable Law; provided, however, that, except to the extent expressly provided in this Agreement or any of the Ancillary Agreements or as otherwise agreed between bluebird and 2seventy, neither bluebird nor 2seventy shall be obligated to make any payment, incur any Liability or offer or grant any accommodation (financial or otherwise, regardless of any provision to the contrary in any underlying Contract, including any requirements for the securing or posting of any bonds, letters of credit or similar instruments, or the furnishing of any guarantees) to any Third Party to obtain or make such Consent; and

(ii) (A) the Party (or the applicable member of its Group) retaining such Asset shall thereafter hold (or shall cause such member in its Group to hold) such Asset in trust for the use and benefit of the Party entitled thereto (at the expense of the Party entitled thereto) and shall be treated as holding it as nominee for the Party entitled thereto, and (B) the Party intended to Assume such Liability shall, or shall cause the applicable member of its Group to, pay or reimburse the Party retaining such Liability for all amounts paid or incurred in connection with the retention of such Liability. To the extent the foregoing applies to any Contracts to be assigned for which any necessary Consents are not received prior to the Distribution Effective Time, the treatment of such Contracts shall, for the avoidance of doubt, be subject to Section 2.8 and Section 2.9, to the extent applicable. In addition, the Party (or the applicable member of its Group) retaining such Asset or Liability shall (or shall cause such member in its Group to) treat, insofar as reasonably possible and to the extent permitted by applicable Law, such Asset or Liability in the ordinary course of business in accordance with past practice and take such other actions as may be reasonably requested by the Party to which such Asset is to be Transferred or by the Party Assuming such Liability in order to place such Party, insofar as reasonably possible and to the extent permitted by applicable Law, in the same position as if such Asset or Liability had been Transferred or Assumed as contemplated hereby, and so that all the benefits and burdens relating to such Asset or Liability, including possession, use, risk of loss, potential for income and gain, and dominion, control and command over such Asset or Liability, are to inure from and after the Distribution Effective Time to the applicable member or members of the bluebird Group or the 2seventy Group entitled to the receipt of such Asset or required to Assume such Liability. In furtherance of the foregoing, the Parties agree that, as of the Distribution Effective Time, each Party shall be deemed to have acquired complete

and sole beneficial ownership over all such Assets, together with all rights, powers and privileges incident thereto, and shall be deemed to have Assumed in accordance with the terms of this Agreement all such Liabilities, and all duties, obligations and responsibilities incident thereto, which such Party is entitled to acquire or required to Assume pursuant to the terms of the Transaction Agreements.

(e) If and when the Consents or conditions, the absence or non-satisfaction of which caused the deferral of Transfer of any Asset or deferral of the Assumption of any Liability pursuant to Section 2.6(a) or Section 2.6(b), are obtained or satisfied, the Transfer or Assumption of the applicable Asset or Liability shall be effected without further consideration in accordance with and subject to the terms of this Agreement (including Section 2.2) or the applicable Ancillary Agreement, and shall, to the extent possible without the imposition of any undue cost on any Party, be deemed to have become effective as of the Distribution Effective Time.

(f) The Party (or the applicable member of its Group) retaining any Asset or Liability due to the deferral of the Transfer of such Asset or the deferral of the Assumption of such Liability pursuant to Section 2.6(a) or Section 2.6(b) or otherwise shall (i) not be obligated, in connection with the foregoing, to expend any money unless the necessary funds are advanced, assumed, or agreed in advance to be reimbursed by the Party (or the applicable member of its Group) entitled to such Asset or the Person intended to be subject to such Liability, other than reasonable attorneys' fees and recording or similar or other incidental fees, all of which shall be promptly reimbursed by the Party (or the applicable member of its Group) entitled to such Asset or the Person intended to be subject to such Liability and (ii) be indemnified for all Indemnifiable Losses or other Liabilities arising out of any actions (or omissions to act) of such retaining Party taken (or not taken) at the written direction of the other Party (or the applicable member of its Group) in connection with and relating to such retained Asset or Liability, as the case may be.

Section 2.7 Further Assurances.

(a) In addition to and without limiting the actions specifically provided for elsewhere in this Agreement and subject to the limitations expressly set forth in this Agreement, including Section 2.6, each of the Parties shall cooperate with each other and shall use (and shall cause its respective Subsidiaries to use) commercially reasonable efforts, from and after the Distribution Effective Time, to take, or to cause to be taken, all actions, and to do, or to cause to be done, all things reasonably necessary on its part under applicable Law or contractual obligations to consummate and make effective the transactions contemplated by this Agreement and the Ancillary Agreements as promptly as reasonably practicable.

(b) Without limiting the foregoing, from and after the Distribution Effective Time:

(i) each Party shall cooperate with the other Party to execute and deliver, and use commercially reasonable efforts to cause to be executed and delivered, all instruments, including instruments of Transfer or title, and to make all filings with, and to obtain all Consents, and to take or cause to be taken all such other actions as such Party may reasonably be requested to take by any other Party from time to time, as promptly as reasonably practicable, consistent with the terms of this Agreement and the Ancillary Agreements, in order to effectuate the provisions and purposes of this Agreement and the Ancillary Agreements and the Transfers of the applicable Assets and the assignment and Assumption of the applicable Liabilities and the other transactions contemplated hereby and thereby; and

(ii) in the event that any Party (or member of such Party's Group) receives any Assets (including the receipt of payments made pursuant to Contracts and proceeds from accounts receivable with respect to such Asset) or is liable for any Liability that is otherwise assigned to any Person that is a member of the other Group pursuant to this Agreement or the Ancillary Agreements, such Party agrees to promptly Transfer, or cause to be Transferred, without further consideration such Asset or Liability to the other Party so entitled thereto (or to a member of such other Party's Group as designated by such other Party) and, prior to any such Transfer, such Asset or Liability, as the case may be, shall be held in accordance with the provisions of Section 2.6; provided that the provisions of this Section 2.7(b)(ii) are not intended to, and shall not, be deemed to constitute an authorization by any Party to permit the other to accept service of process on its behalf and no Party is or shall be deemed to be the agent of any other Party for service of process purposes.

(c) From and after the Distribution Effective Time, with respect to any Action where any Party hereto is a defendant, when and if requested by such Party, the other Party shall use commercially reasonable efforts to petition the applicable court to remove the requesting Party as a defendant to the extent that such Action relates solely to Assets or Liabilities that the other Party (or any member of such other Party's Group) has been assigned pursuant to this Article II, and the other Party shall cooperate and assist in any required communication with any plaintiff or other related Third Party.

Section 2.8 Novation of bluebird Retained Liabilities; Indemnification.

(a) Other than with respect to Shared Contracts, which shall be governed solely by Section 2.3, each of bluebird and 2seventy, at the request of the other Party, shall use its commercially reasonable efforts to obtain, or to cause to be obtained, as soon as reasonably practicable, any Consent, substitution or amendment required to novate or assign all obligations and other Liabilities for which a member of the bluebird Group and a member of the 2seventy

Group are jointly or severally liable and that constitute bluebird Retained Liabilities, or to obtain in writing the unconditional release of all members of the 2seventy Group to such arrangements, so that, in any such case, the members of the bluebird Group will be solely responsible for such Liabilities; provided, however, that except as expressly provided in any of the Ancillary Agreements, any Third Party Agreement, or as otherwise agreed between bluebird and 2seventy, neither bluebird nor 2seventy shall be obligated to make any payment, incur any Liability or offer or grant any accommodation (financial or otherwise, regardless of any provision to the contrary in any underlying Contract, including any requirements for the securing or posting of any bonds, letters of credit or similar instruments, or the furnishing of any guarantees) to any Third Party from whom any such Consent, substitution, amendment or release is requested.

(b) If bluebird or 2seventy, as applicable, is unable to obtain, or to cause to be obtained, any such required Consent, substitution, amendment or release with respect to any such Liability, the applicable member of the 2seventy Group shall from and after the Distribution Effective Time continue to be bound by such obligation or other Liability and, unless not permitted by the terms thereof or by Law, from and after the Distribution Effective Time, bluebird shall or shall cause a member of the bluebird Group to, as agent or subcontractor for such member of the 2seventy Group pay, perform and discharge fully such Liability to the extent that it does not constitute a 2seventy Liability. 2seventy shall cause each member of the 2seventy Group without further consideration to promptly pay and remit, or cause to be paid or remitted, to bluebird or to another member of the bluebird Group specified by bluebird, all money, rights and other consideration received by 2seventy or any member of the 2seventy Group in respect of such performance (unless any such consideration is a 2seventy Asset). If and when any such Consent, substitution, amendment or release shall be obtained or the Liability shall otherwise become assignable or able to be novated, without payment of further consideration, 2seventy shall promptly assign, or cause to be assigned, such Liability to bluebird or to another member of the bluebird Group specified by bluebird, and bluebird shall, or shall cause such other member of the bluebird Group to, Assume such Liability.

Section 2.9 Novation of 2seventy Liabilities; Indemnification.

(a) Other than with respect to Shared Contracts, which shall be governed solely by Section 2.3, each of bluebird and 2seventy, at the request of the other Party, shall use its commercially reasonable efforts to obtain, or to cause to be obtained, as soon as reasonably practicable, any Consent, substitution or amendment required to novate or assign all obligations and other Liabilities for which a member of the bluebird Group and a member of the 2seventy Group are jointly or severally liable and that constitute 2seventy Liabilities, or to obtain in writing the unconditional release of all members of the bluebird Group to such arrangements, so that, in any such case, the members of the 2seventy Group will be solely responsible for such Liabilities; provided, however, that except as expressly provided in any of the Ancillary

Agreements, any Third Party Agreement, or as otherwise agreed between bluebird and 2seventy, neither bluebird nor 2seventy shall be obligated to make any payment, incur any Liability or offer or grant any accommodation (financial or otherwise, regardless of any provision to the contrary in any underlying Contract, including any requirements for the securing or posting of any bonds, letters of credit or similar instruments, or the furnishing of any guarantees) to any Third Party from whom any such Consent, substitution, amendment or release is requested.

(b) If bluebird or 2seventy, as applicable, is unable to obtain, or to cause to be obtained, any such required Consent, substitution, amendment or release with respect to any such Liability, the applicable member of the bluebird Group shall from and after the Distribution Effective Time continue to be bound by such obligation or other Liability and, unless not permitted by the terms thereof or by Law, from and after the Distribution Effective Time, 2seventy shall or shall cause a member of the 2seventy Group to, as agent or subcontractor for such member of the bluebird Group pay, perform and discharge fully such Liability to the extent that it does not constitute a bluebird Retained Liability. bluebird shall cause each member of the bluebird Group without further consideration to promptly pay and remit, or cause to be paid or remitted, to 2seventy or to another member of the 2seventy Group specified by 2seventy, all money, rights and other consideration received by bluebird or any member of the bluebird Group in respect of such performance (unless any such consideration is a bluebird Retained Asset). If and when any such Consent, substitution, amendment or release shall be obtained or the Liability shall otherwise become assignable or able to be novated, without payment of further consideration, bluebird shall promptly assign, or cause to be assigned, such Liability to 2seventy or to another member of the 2seventy Group specified by 2seventy, and 2seventy shall, or shall cause such other member of the 2seventy Group to, Assume such Liability.

Section 2.10 Disclaimer of Representations and Warranties.

(a) EACH OF BLUEBIRD (ON BEHALF OF ITSELF AND EACH MEMBER OF THE BLUEBIRD GROUP) AND 2SEVENTY (ON BEHALF OF ITSELF AND EACH MEMBER OF THE 2SEVENTY GROUP) UNDERSTANDS AND AGREES THAT, EXCEPT AS EXPRESSLY SET FORTH HEREIN, OR IN ANY ANCILLARY AGREEMENT, NO PARTY TO THIS AGREEMENT, ANY ANCILLARY AGREEMENT OR ANY OTHER AGREEMENT OR DOCUMENT CONTEMPLATED BY THIS AGREEMENT, ANY ANCILLARY AGREEMENTS OR OTHERWISE, IS REPRESENTING OR WARRANTING IN ANY WAY, AND HEREBY DISCLAIMS ALL REPRESENTATIONS AND WARRANTIES, AS TO THE ASSETS, BUSINESSES OR LIABILITIES CONTRIBUTED, TRANSFERRED OR ASSUMED AS CONTEMPLATED HEREBY OR THEREBY, AS TO ANY CONSENTS REQUIRED IN CONNECTION HEREWITH OR THEREWITH, AS TO THE VALUE OR FREEDOM FROM ANY SECURITY INTERESTS OF, AS TO NONINFRINGEMENT, VALIDITY OR ENFORCEABILITY OR ANY OTHER MATTER

CONCERNING, ANY ASSETS OR BUSINESS OF SUCH PARTY, OR AS TO THE ABSENCE OF ANY DEFENSES OR RIGHT OF SETOFF OR FREEDOM FROM COUNTERCLAIM WITH RESPECT TO ANY ACTION OR OTHER ASSET, INCLUDING ACCOUNTS RECEIVABLE, OF ANY PARTY, OR AS TO THE LEGAL SUFFICIENCY OF ANY CONTRIBUTION, ASSIGNMENT, DOCUMENT, CERTIFICATE OR INSTRUMENT DELIVERED HEREUNDER TO CONVEY TITLE TO ANY ASSET OR THING OF VALUE UPON THE EXECUTION, DELIVERY AND FILING HEREOF OR THEREOF. EXCEPT AS MAY EXPRESSLY BE SET FORTH HEREIN OR IN ANY ANCILLARY AGREEMENT, ALL SUCH ASSETS ARE BEING TRANSFERRED ON AN "AS IS, WHERE IS" BASIS (AND, IN THE CASE OF ANY REAL PROPERTY, BY MEANS OF A QUITCLAIM OR SIMILAR FORM DEED OR CONVEYANCE) AND THE RESPECTIVE TRANSFEREES SHALL BEAR THE ECONOMIC AND LEGAL RISKS THAT (I) ANY CONVEYANCE SHALL PROVE TO BE INSUFFICIENT TO VEST IN THE TRANSFEREE GOOD TITLE, FREE AND CLEAR OF ANY SECURITY INTEREST AND (II) ANY NECESSARY CONSENTS OR GOVERNMENTAL APPROVALS ARE NOT OBTAINED OR THAT ANY REQUIREMENTS OF LAWS OR JUDGMENTS ARE NOT COMPLIED WITH.

(b) Each of bluebird (on behalf of itself and each member of the bluebird Group) and 2seventy (on behalf of itself and each member of the 2seventy Group) further understands and agrees that if the disclaimer of express or implied representations and warranties contained in Section 2.10(a) is held unenforceable or is unavailable for any reason under the Laws of any jurisdiction outside the United States or if, under the Laws of a jurisdiction outside the United States, both bluebird or any member of the bluebird Group, on the one hand, and 2seventy or any member of the 2seventy Group, on the other hand, are jointly or severally liable for any bluebird Retained Liability or any 2seventy Liability, then the Parties intend that, notwithstanding any provision to the contrary under the Laws of such non-U.S. jurisdictions, the provisions of this Agreement and the Ancillary Agreements (including the disclaimer of all representations and warranties, allocation of Liabilities among the Parties and their respective Subsidiaries, releases, indemnification and contribution of Liabilities) shall prevail for any and all purposes among the Parties and their respective Subsidiaries.

Section 2.11 Cash Management. From the date of this Agreement until the Distribution Effective Time, bluebird and its Subsidiaries shall be entitled to use, retain or otherwise dispose of all cash generated by the Oncology Business and the 2seventy Assets in accordance with the ordinary course operation of bluebird's cash management systems. Prior to the Distribution Effective Time, in connection with the intended capitalization of the 2seventy Group, bluebird shall cause to be contributed to 2seventy an amount in cash and cash equivalents, as bluebird may determine in its sole and absolute discretion. All cash and cash equivalents held by any member of the 2seventy Group as of the Distribution Effective Time shall be a 2seventy Asset,

and all cash and cash equivalents held by any member of the bluebird Group as of the Distribution Effective Time shall be a bluebird Retained Asset.

ARTICLE III
CERTAIN ACTIONS AT OR PRIOR TO THE DISTRIBUTION

Section 3.1 Transaction Agreements. At or prior to the Distribution Effective Time, bluebird and 2seventy shall enter into, or (where applicable) shall cause a member or members of their respective Groups to enter into each Transaction Agreement (other than this Agreement).

ARTICLE IV
THE DISTRIBUTION

Section 4.1 Distribution. On or prior to the Distribution Effective Time, in furtherance of the Separation, 2seventy shall issue to bluebird such number of shares of 2seventy Common Stock as may be required in order to effect the Distribution in accordance with the terms of this Agreement (or bluebird and 2seventy shall take or cause to be taken such other appropriate actions to ensure that bluebird has the requisite number of shares of 2seventy Common Stock), which shares as of the date of issuance shall represent (together with such shares previously held by bluebird) all of the issued and outstanding shares of 2seventy Common Stock. Subject to the conditions and other terms set forth in this Article IV, bluebird shall cause the Distribution Agent on the Distribution Date to make the Distribution, including by crediting the appropriate number of shares of 2seventy Common Stock to book entry accounts for each Record Holder or designated transferee or transferees of such Record Holder. For stockholders who own bluebird Common Stock through a broker or other nominee, their shares of 2seventy Common Stock will be credited to their respective accounts by such broker or nominee. No action by any stockholder (or such stockholder's designated transferee or transferees) shall be necessary to receive the applicable number of shares of 2seventy Common Stock (and, if applicable, cash in lieu of any fractional shares) to which such stockholder is entitled in the Distribution.

Section 4.2 Fractional Shares. bluebird registered stockholders who, after aggregating the number of shares of 2seventy Common Stock (or fractions thereof) to which such stockholder would be entitled on the Record Date, would be entitled to receive a fraction of a share of 2seventy Common Stock in the Distribution, will be entitled to receive cash in lieu of fractional shares. Fractional shares of 2seventy Common Stock will not be distributed by bluebird in the Distribution. The Distribution Agent shall, as soon as practicable after the Distribution Date, (a) determine the number of whole shares and fractional shares of 2seventy Common Stock allocable to each such bluebird stockholder, (b) aggregate all such fractional shares into whole shares and sell the whole shares obtained thereby in open market transactions at then prevailing trading prices on behalf of holders who would otherwise be entitled to

fractional share interests, and (c) distribute to each such holder, or for the benefit of each such beneficial owner, such holder's or owner's pro rata share of the aggregate net cash proceeds of these sales, after making appropriate deductions for any amount required to be withheld for U.S. federal income tax purposes. bluebird shall bear the cost of brokerage fees and transfer Taxes incurred in connection with these sales of fractional shares, which such sales shall occur as soon after the Distribution Date as practicable and as determined by the Distribution Agent. None of bluebird, 2seventy or the Distribution Agent will guarantee any minimum sale price for the fractional shares of 2seventy Common Stock. Neither bluebird nor 2seventy will pay any interest on the proceeds from the sale of fractional shares. The Distribution Agent will have the sole and absolute discretion to select the broker-dealers through which to sell the aggregated fractional shares and to determine when, how and at what price to sell such shares. Neither the Distribution Agent nor the selected broker-dealers will be Affiliates of bluebird or 2seventy.

Section 4.3 Actions in Connection with the Distribution.

(a) Prior to the Distribution Date, bluebird shall, or at bluebird's election, 2seventy shall, mail (or deliver by electronic means where not prohibited by Law) to the holders of bluebird Common Stock, at such time on or prior to the Distribution Date as bluebird shall determine, the Information Statement included in its Form 10 (or a Notice of Internet Availability of the Information Statement), as well as any other information concerning 2seventy, its business, operations and management, the transactions contemplated herein and such other matters as bluebird shall reasonably determine are necessary and as may be required by Law.

(b) 2seventy shall use commercially reasonable efforts in preparing, filing with the Commission and causing to become effective, as soon as reasonably practicable (but in any case prior to the Distribution Effective Time), an effective registration statement or amendments thereof which are required in connection with the establishment of, or amendments to, any employee benefit plans of 2seventy.

(c) To the extent not already approved and effective, 2seventy shall use commercially reasonable efforts to have approved and made effective, the application for the original listing on NASDAQ of the 2seventy Common Stock to be distributed in the Distribution, subject to official notice of distribution.

(d) Nothing in this Section 4.3 shall be deemed to shift or otherwise impose Liability for any portion of the Form 10 or Information Statement to bluebird.

Section 4.4 Sole and Absolute Discretion of bluebird. bluebird, in its sole and absolute discretion, shall determine the Distribution Date, the Distribution Effective Time and all other terms of the Distribution, including the form, structure and terms of any transactions and/or

offerings to effect the Distribution and the timing of and conditions to the consummation thereof. In addition, bluebird may, in accordance with Section 10.10, at any time and from time to time until the completion of the Distribution decide to abandon the Distribution or modify or change the terms of the Distribution, including by accelerating or delaying the timing of the consummation of all or part of the Distribution. Without limiting the foregoing, bluebird shall have the right not to complete the Distribution if, at any time prior to the Distribution Effective Time, the Board shall have determined, in its sole and absolute discretion, that the Distribution is not in the best interests of bluebird or its stockholders, that another strategic alternative is in the best interests of bluebird or its stockholders, or that it is not advisable at that time for the Oncology Business to separate from bluebird.

Section 4.5 Conditions to Distribution. Subject to Section 4.4, the obligation of bluebird to consummate the Distribution is subject to the prior or simultaneous satisfaction, or, to the extent permitted by applicable Law, waiver by bluebird, in its sole and absolute discretion, of the following conditions. None of 2seventy, any other member of the 2seventy Group, or any Third Party shall have any right or claim to require the consummation of the Distribution, which shall be effected at the sole and absolute discretion of the Board. Any determination by bluebird, and any subsequent amendment, revision, withdrawal or change thereto made by bluebird prior to the Distribution and concerning the satisfaction or waiver of any or all of the conditions set forth in this Section 4.5 shall be conclusive and binding on the Parties. The conditions are for the sole benefit of bluebird and shall not give rise to or create any duty on the part of bluebird or the Board to waive or not waive any such condition. Each Party shall use its commercially reasonable efforts to keep the other Party apprised of its efforts with respect to, and the status of, each of the following conditions:

(a) the Transfers of Assets and Assumptions of Liabilities described in Section 2.2 that are to be completed prior to the Distribution shall have been completed in accordance with the terms of this Agreement;

(b) the Commission shall have declared effective the Form 10, no stop order relating thereto will be in effect, no proceedings seeking any such stop order shall be pending before or threatened by the Commission, and the Information Statement (or the Notice of Internet Availability of the Information Statement) shall have been distributed to holders of bluebird Common Stock;

(c) the shares of 2seventy Common Stock to be distributed shall have been approved and accepted for listing by NASDAQ, subject to official notice of distribution;

(d) the receipt and continuing validity of both a private letter ruling from the Internal Revenue Service and an opinion of Goodwin Procter LLP, both satisfactory to the Board, together confirming that the Separation and Distribution generally are tax-free for U.S. federal income tax purposes under Sections 355 and 368(a)(1)(D) of the Code;

(e) the receipt and continuing validity of an opinion from an independent appraisal firm, satisfactory to the Board, with respect to certain solvency matters and as to the compliance by bluebird with surplus requirements under Delaware corporate law in declaring to pay the Distribution;

(f) all permits, registrations and Consents required under the securities or blue sky laws of states or other political subdivisions of the United States or of other foreign jurisdictions in connection with the Distribution shall have been received;

(g) no order, injunction, or decree issued by any Governmental Entity of competent jurisdiction, or other legal restraint or prohibition preventing the consummation of the Distribution or any of the related transactions shall be pending, threatened, issued or in effect, and no other event outside the control of bluebird shall have occurred or failed to occur that prevents the consummation of all or any portion of the Distribution;

(h) the Board shall have declared the Distribution and approved all related transactions (and such declaration or approval shall not have been withdrawn);

(i) each of 2seventy and bluebird shall have executed and delivered each of the other Transaction Agreements; and

(j) no events or developments shall have occurred or shall exist that, in the sole and absolute judgment of the Board, make it inadvisable to effect the Distribution or would result in the Distribution and related transactions not being in the best interest of bluebird or its stockholders.

ARTICLE V
CERTAIN COVENANTS

Section 5.1 Non-Solicit; Non-Hire. Commencing on and for a period of twelve (12) months following the Distribution Date, neither Party nor any of its Subsidiaries will: (a) without the prior written consent of the other Party, directly or indirectly, on their own behalf or in the service or on behalf of others, solicit, aid, induce or knowingly encourage any employee of the other Party to terminate or breach an employment, contractual or other relationship with the other Party (or any of its Subsidiaries), or (b) hire or otherwise employ any employee of the other Party (or any of its Subsidiaries); provided, however, that nothing in this Section 5.1 shall be deemed to prohibit (i) any general solicitation for employment through advertisements and search firms not specifically directed at employees of such other Party (or any of its Subsidiaries), provided that the soliciting Person has not directed, advised or knowingly encouraged such firm to approach any such employee, (ii) the solicitation or hiring of an individual whose employment was terminated by such other Party (or any of its Subsidiaries), (iii) the solicitation or hiring of an individual formerly employed by a Party (or any of its Subsidiaries) at any time after six (6) months following such individual's termination of his or

her employment with such other Party or (iv) the hiring by any Party of any individual (y) not solicited by such Party in breach of this Section 5.1 and (x) with the prior written consent of the other Party (such consent not to be unreasonably withheld, conditioned or delayed), it being understood that the Party whose consent is requested may take into account, among other things, its own hiring needs and competitive considerations.

Section 5.2 No Right to Use Regulatory Information. Except as the Parties may otherwise agree in writing (including in any Ancillary Agreement) or as would otherwise be permitted by Law: (a) no member of the bluebird Group shall have a right of reference to or otherwise be entitled to use any regulatory filings or other regulatory information owned or controlled by any member of the 2seventy Group for any products or product candidates in the Oncology Business; and (b) no member of the 2seventy Group shall have a right of reference to or otherwise be entitled to use any regulatory filings or other regulatory information owned or controlled by any member of the bluebird Group for any products or product candidates in the Severe Genetic Disease Business.

Section 5.3 Use of Retained Names and Marks. 2seventy hereby acknowledges that bluebird or its Affiliates or its or their licensors own all right, title and interest in and to Trademarks and all other identifiers of source or goodwill containing, incorporating or associated with Trademarks, excluding, on and after the Distribution Date, the 2seventy Trademarks (collectively, the "Retained Names and Marks"), and that any and all right of 2seventy to use the Retained Names and Marks shall terminate as of the Distribution Date and shall immediately revert to bluebird or its Affiliates, along with any and all goodwill associated therewith; provided that uses that are incidental to the occupation and use of the Leased Real Property and the signage, equipment and supplies therein shall be permitted for a reasonable period of time sufficient to permit 2seventy to replace or exhaust the use of such materials. 2seventy further acknowledges that it has no rights in any of the Retained Names and Marks, and that it is not acquiring any rights, directly or indirectly, to use the Retained Names and Marks, except as expressly provided herein. bluebird hereby acknowledges that, on and after the Distribution Date, 2seventy or its Affiliates or its or their licensors own all right, title and interest in and to the 2seventy Trademarks, and that any and all right of bluebird to use the 2seventy Trademarks shall terminate as of the Distribution Date. bluebird further acknowledges that, on and after the Distribution Date, it will have no rights in any of the 2seventy Trademarks.

ARTICLE VI
INDEMNIFICATION

Section 6.1 Release of Pre-Distribution Claims.

(a) Except (x) as provided in Section 6.1(b), (y) as may be otherwise expressly provided in this Agreement or in any Ancillary Agreement and (z) for any matter for

which either Party is entitled to indemnification pursuant to this Article VI or under any Ancillary Agreement:

(i) bluebird, for itself and each member of the bluebird Group and, to the extent permitted by Law, all Persons who at any time prior to the Distribution Effective Time were directors, officers, agents or employees of any member of the bluebird Group (in their respective capacities as such), in each case, together with their respective heirs, executors, administrators, successors and assigns, does hereby remise, release and forever discharge 2seventy and the other members of the 2seventy Group and all Persons who at any time prior to the Distribution Effective Time were stockholders, directors, officers, agents or employees of any member of the 2seventy Group (in their respective capacities as such), in each case, together with their respective heirs, executors, administrators, successors and assigns, from any and all (A) bluebird Retained Liabilities and (B) Liabilities existing or arising: (1) in connection with the implementation of the Separation (including the Distribution); or (2) from actions, inactions, events, omissions, conditions, facts or circumstances occurring or existing prior to the Distribution Effective Time (whether or not such Liabilities cease being contingent, mature, become known, are asserted or foreseen, or accrue, in each case before, at or after the Distribution Effective Time), in each case to the extent relating to, arising out of or resulting from the Severe Genetic Disease Business, the bluebird Retained Assets or the bluebird Retained Liabilities, whether at Law or in equity (including any right of contribution), whether arising under any Contract, by operation of Law or otherwise, in each case, existing or arising from any acts or events occurring or failing to occur or alleged to have occurred or to have failed to occur or any conditions existing or alleged to have existed on or before the Distribution Effective Time, including in connection with the Separation and any of the other transactions contemplated hereunder and under the Ancillary Agreements (such liabilities, the "bluebird Released Liabilities") and in any event shall not, and shall cause its respective Subsidiaries not to, bring any Action against any member of the 2seventy Group in respect of any bluebird Released Liabilities. Notwithstanding the foregoing, nothing in this Agreement shall be deemed to limit bluebird, any member of the bluebird Group, or their respective Affiliates from commencing any Actions against any 2seventy officer, director, agent or employee, or their respective heirs, executors, administrators, successors and assigns, with regard to matters arising from, or relating to criminal acts by any such officers, directors, agents or employees.

(ii) 2seventy, for itself and each member of the 2seventy Group and, to the extent permitted by Law, all Persons who at any time prior to the Distribution Effective Time were directors, officers, agents or employees of any member of the 2seventy Group (in their respective capacities as such), in each case, together with their respective heirs, executors, administrators, successors and assigns, does hereby remise, release and forever discharge bluebird and the other members of the bluebird Group and all Persons who at any time prior to the Distribution Effective Time were stockholders, directors, officers, agents or employees of

any member of the bluebird Group (in their respective capacities as such), in each case, together with their respective heirs, executors, administrators, successors and assigns, from any and all (A) 2seventy Liabilities and (B) Liabilities existing or arising: (1) in connection with the implementation of the Separation (including the Distribution); or (2) from actions, inactions, events, omissions, conditions, facts or circumstances occurring or existing prior to the Distribution Effective Time (whether or not such Liabilities cease being contingent, mature, become known, are asserted or foreseen, or accrue, in each case before, at or after the Distribution Effective Time), in each case to the extent relating to, arising out of or resulting from the Oncology Business, the 2seventy Assets or the 2seventy Liabilities, whether at Law or in equity (including any right of contribution), whether arising under any Contract, by operation of Law or otherwise, in each case, existing or arising from any acts or events occurring or failing to occur or alleged to have occurred or to have failed to occur or any conditions existing or alleged to have existed on or before the Distribution Effective Time, including in connection with the Separation and any of the other transactions contemplated hereunder and under the Ancillary Agreements (such liabilities, the "2seventy Released Liabilities") and in any event shall not, and shall cause its respective Subsidiaries, if any, not to, bring any Action against any member of the bluebird Group in respect of any 2seventy Released Liabilities; provided, however, that for purposes of this Section 6.1(a)(ii), the members of the 2seventy Group shall also release and discharge any officers or other employees of any member of the bluebird Group, to the extent any such officers or employees served as directors or officers of any member of the 2seventy Group prior to the Distribution, from any and all Liabilities or responsibilities for any and all past actions or failures to take action, in each case in their respective capacities as directors or officers, as the case may be, of any such member of the 2seventy Group, prior to the Distribution Effective Time. Notwithstanding the foregoing, nothing in this Agreement shall be deemed to limit 2seventy, any member of the 2seventy Group, or their respective Affiliates from commencing any Actions against any bluebird officer, director, agent or employee, or their respective heirs, executors, administrators, successors and assigns, with regard to matters arising from, or relating to criminal acts by any such officers, directors, agents or employees.

(b) Nothing contained in this Agreement, including Section 6.1(a) or Section 2.5, shall impair or otherwise affect any right of any Party and, as applicable, a member of such Party's Group, as well as their respective heirs, executors, administrators, successors and assigns, to enforce this Agreement, any Ancillary Agreement or any agreements, arrangements, commitments or understandings contemplated in this Agreement or in any Ancillary Agreement to continue in effect after the Distribution Effective Time. In addition, nothing contained in Section 6.1(a) shall:

(i) release any Person from any Liability Assumed, Transferred or expressly assigned to a Party or a member of such Party's Group pursuant to or as contemplated by, or any other Liability of any member of such Group under, this Agreement or any Ancillary

Agreement including (A) with respect to bluebird, any bluebird Retained Liability, (B) with respect to 2seventy, any 2seventy Liability, (C) any Liability expressly preserved pursuant to Section 2.5 and (D) any Liability that the Parties may have with respect to indemnification or contribution pursuant to this Agreement or any Ancillary Agreement or otherwise for Actions brought against the Parties by Third Parties, which Liability shall be governed by the provisions of this Agreement and, in particular, this Article VI and, if applicable, the appropriate provisions of the Ancillary Agreements;

(ii) release any Person from any Liability provided for in or resulting from any other Contract or understanding that is entered into after the Distribution Effective Time between any Party (and/or a member of such Party's Group), on the one hand, and the other Party (and/or a member of such Party's Group), on the other hand;

(iii) release any Person other than the Persons released in Section 6.1(a); or

(iv) release any employee of 2seventy from any Contract with any member of the bluebird Group to the extent related to the bluebird Retained Assets, bluebird Retained Liabilities or Severe Genetic Disease Business.

In addition, nothing contained in Section 6.1(a) shall release bluebird from indemnification or contribution with respect to any director, officer or employee of 2seventy who was a director, officer or employee of bluebird or any of its Affiliates prior to the Distribution Effective Time, as the case may be, with respect to which he or she was entitled to such indemnification or contribution pursuant to an obligation existing immediately prior to the Distribution Effective Time; it being understood that if the underlying obligation giving rise to such Action is established by a court of competent jurisdiction to be a 2seventy Liability, 2seventy shall indemnify bluebird for such Liability (including bluebird's costs to indemnify the director, officer or employee) in accordance with the provisions set forth in this Article VI.

(c) Each Party shall not, and shall not permit any member of its Group to, make any claim for offset, or commence any Action, including any claim of contribution or any indemnification, against any other Party or any member of any other Party's Group, or any other Person released pursuant to Section 6.1(a), with respect to any Liabilities released pursuant to Section 6.1(a). If any Person associated with a Party (including any director, officer or employee of a Party) initiates any Action with respect to claims released by this Section 6.1, the Party with which such Person is associated shall be responsible for the reasonable fees and expenses of counsel of the other Party and/or the members of such Party's Group, as applicable, and such other Party shall be indemnified for all Liabilities incurred in connection with such Action in accordance with the provisions set forth in this Article VI.

(d) Each Party acknowledges that the foregoing releases include a release of any rights and benefits with respect to the Liabilities described therein that such Party and each member of such Party's Group, and their respective successors and assigns, now has or in the future may have conferred upon them by virtue of any statute or common law principle which provides that a general release does not extend to claims which a Party does not know or suspect to exist in its favor at the time of executing the release. In this connection, each Party hereby acknowledges that it is aware that factual matters now unknown to it may have given or may hereafter give rise to Liabilities that are presently unknown, unanticipated and unsuspected, and it further agrees that the foregoing releases have been negotiated and agreed upon in light of that awareness.

Section 6.2 Indemnification by bluebird. In addition to any other provisions of this Agreement requiring indemnification and except as otherwise specifically set forth in any provision of this Agreement or of any Ancillary Agreement, following the Distribution Effective Time, bluebird shall and shall cause the other members of the bluebird Group to indemnify, hold harmless and defend the 2seventy Indemnitees from and against any and all Indemnifiable Losses of the 2seventy Indemnitees to the extent relating to, arising out of, by reason of or otherwise in connection with (a) the bluebird Retained Liabilities, including the failure of any member of the bluebird Group or any other Person to pay, perform or otherwise discharge any bluebird Retained Liability in accordance with its respective terms, whether arising prior to, on or after the Distribution Effective Time, or (b) any breach by bluebird of any provision of this Agreement or any Ancillary Agreement unless such Ancillary Agreement expressly provides for separate indemnification therein, in which case any such indemnification claims shall be made thereunder (each, a "2seventy Claim").

Section 6.3 Indemnification by 2seventy. In addition to any other provisions of this Agreement requiring indemnification and except as otherwise specifically set forth in any provision of this Agreement or of any Ancillary Agreement, following the Distribution Effective Time, 2seventy shall and shall cause the other members of the 2seventy Group to indemnify, hold harmless and defend the bluebird Indemnitees from and against any and all Indemnifiable Losses of the bluebird Indemnitees to the extent relating to, arising out of, by reason of or otherwise in connection with (a) the 2seventy Liabilities, including the failure of any member of the 2seventy Group or any other Person to pay, perform or otherwise discharge any 2seventy Liability in accordance with its respective terms, whether prior to, on or after the Distribution Effective Time, or (b) any breach by 2seventy of any provision of this Agreement or any Ancillary Agreement unless such Ancillary Agreement expressly provides for separate indemnification therein, in which case any such indemnification claims shall be made thereunder (each, a "bluebird Claim").

Section 6.4 Procedures for Indemnification.

(a) Other than with respect to Third Party Claims, which shall be governed by Section 6.4(b):

(i) if a 2seventy Indemnitee has made a determination that it is or may be entitled to indemnification in respect of any 2seventy Claim, the 2seventy Indemnitee shall so notify bluebird as promptly as reasonably practicable after becoming aware of the existence of such 2seventy Claim; and

(ii) if a bluebird Indemnitee has made a determination that it is or may be entitled to indemnification in respect of any bluebird Claim, the bluebird Indemnitee shall so notify 2seventy as promptly as reasonably practicable after becoming aware of the existence of such bluebird Claim (any such claim made pursuant to Section 6.4(a)(i) or this Section 6.4(a)(ii), a "Direct Claim").

Each such notice shall be in writing and shall describe in reasonable detail the basis for the claim for indemnification hereunder and set forth, to the extent known, the estimated amount of Indemnifiable Losses for which indemnification may be sought hereunder relating to such claim (including, to the extent practicable, the method of computation thereof); provided, however, that the failure to provide such written notice shall not release the Indemnifying Party from any of its obligations except and solely to the extent the Indemnifying Party shall have been actually materially prejudiced as a result of such failure. The Indemnifying Party will have a period of thirty (30) days after receipt of any such notice under this Section 6.4(a) to respond to the claimant thereto. If the Indemnifying Party fails to respond within such period, the claim specified in such notice from the Indemnitee shall be conclusively determined to be an indemnifiable claim for which the Indemnifying Party shall be liable to the applicable Indemnitee(s) hereunder.

(b) If a claim or demand is made against an Indemnitee by any Third Party (a "Third Party Claim") as to which such Indemnitee is or may be entitled to indemnification pursuant to this Agreement, bluebird (on behalf of the bluebird Indemnitees) or 2seventy (on behalf of the 2seventy Indemnitees), as applicable (such claimant, the "Claiming Party"), shall notify the Indemnifying Party of the Third Party Claim in writing and in reasonable detail describing the basis for any claim for indemnification hereunder, referring to the provisions of this Agreement or any Ancillary Agreement in respect of which such right of indemnification is claimed by such Indemnitee or arises and including copies of all Third Party written notices and documents received by the Claiming Party (and any or all of its Indemnitees) relating to the Third Party Claim promptly (and in any event within twenty (20) days) after receipt by such Indemnitee of written notice of the Third Party Claim; provided, however, that the failure to provide notice of any such Third Party Claim pursuant to this sentence shall not release the

Indemnifying Party from any of its obligations except and solely to the extent the Indemnifying Party shall have been actually materially prejudiced as a result of such failure. Thereafter, the Claiming Party shall deliver to the Indemnifying Party, promptly (and in any event within five (5) Business Days) after the receipt thereof by the Claiming Party (or any of its Indemnitees), copies of any and all additional Third Party written notices and documents (including court papers) received by the Claiming Party (or any of its Indemnitees) relating to the Third Party Claim.

(c) Subject to the provisions of this Section 6.4(c), the Indemnifying Party has the right, exercisable by written notice to the Claiming Party within thirty (30) days after receipt of notice from the Claiming Party pursuant to Section 6.4(b), to assume and conduct the defense (including, subject to the conditions of this Section 6.4(c), settlement) of such Third Party Claim in accordance with the limits set forth in this Agreement with counsel selected by the Indemnifying Party and reasonably acceptable to the applicable Indemnitees. If the Indemnifying Party does not assume the defense of a Third Party Claim in accordance with this Section 6.4(c), the Indemnitee may defend the Third Party Claim. If the Indemnifying Party has assumed the defense of a Third Party Claim as provided in this Section 6.4(c), the Indemnifying Party shall not be liable for any legal expenses subsequently incurred by the Indemnitee in connection with the defense of the Third Party Claim; provided, however, that if (w) in the reasonable judgment of the Indemnitee, after consultation with outside counsel, there exists a conflict of interest between the Indemnifying Party and the applicable Indemnitee(s) in the defense of such Third Party Claim by the Indemnifying Party, (x) the party making such Third Party Claim is a Governmental Entity with regulatory or other authority over the Indemnitee or any of its material assets, (y) the Third Party Claim seeks injunctive or other non-monetary relief that, if granted, would reasonably be expected to have a material and adverse effect on the Indemnitee's business or (z) the Indemnifying Party fails to take reasonable steps necessary to defend diligently such Third Party Claim, the Indemnitee may assume its own defense, and the Indemnifying Party shall be liable for all reasonable costs or expenses paid or incurred in connection with such defense; provided that the Indemnifying Party shall not be responsible for the expenses of more than one counsel for all Indemnitees with respect to the same Third Party Claim or related Third Party Claims (plus one local counsel in any jurisdiction within which such Third Party Claim has been brought). The Indemnifying Party or the Indemnitee, as the case may be, has the right to participate in (but, subject to the prior sentence, not control), at its own expense, the defense of any Third Party Claim that the other Person is defending as provided in this Agreement. The Indemnifying Party, if it has assumed the defense of any Third Party Claim as provided in this Agreement, may not, without the prior written consent of the Indemnitee (not to be unreasonably withheld, conditioned or delayed), consent to a settlement or compromise of, or the entry of any judgment arising from, any such Third Party Claim. The Indemnitee may consent to a settlement or compromise of, or the entry of any judgment arising from, any Third

Party Claim, the defense of which has not been assumed by the Indemnifying Party, only with the prior written consent of the Indemnifying Party, not to be unreasonably withheld, conditioned or delayed.

(d) The Claiming Party and the Indemnifying Party shall (and the Claiming Party shall cause the applicable Indemnitee(s) to) make reasonably available to each other and their respective agents and representatives all relevant records available to them that are necessary or appropriate for the defense of any Third Party Claim, subject to any *bona fide* claims of attorney-client privilege, and each of the Indemnifying Party and the Claiming Party shall use its reasonable efforts to assist, and to cause the employees and counsel of such party to assist, in the defense of such Third Party Claim. If a Party asserts its right to participate in the defense and investigation of any Third Party Claim, the Party controlling the defense and investigation of such Third Party Claim shall act in good faith and reasonably consult and cooperate with the Indemnitee or the Indemnifying Party, as the case may be, in connection with any appearances, briefs, arguments and proposals made or submitted by or on behalf of any party in connection with the Third Party Claim (including considering in good faith all reasonable additions, deletions or changes suggested by the Indemnitee or the Indemnifying Party, as the case may be, in connection with any filings made with any Governmental Entity or proposals to the Third Party claimant in connection therewith). With respect to any Third Party Claim that implicates both Parties in any material respect due to the allocation of Liabilities, responsibilities for management of defense and related indemnities pursuant to this Agreement or any of the Ancillary Agreements, the Parties agree to use commercially reasonable efforts to cooperate fully and maintain a joint defense (in a manner that, to the extent reasonably practicable, will preserve for all Parties any Privilege with respect thereto). The Party that is not responsible for managing the defense of any such Third Party Claim shall, upon reasonable request, be consulted with respect to significant matters relating thereto and may, if necessary or helpful, retain counsel to assist in the defense of such claims. Notwithstanding the foregoing, nothing in this Section 6.4(d) shall derogate from a Party's right to control the defense of any Action in accordance with Section 6.4.

(e) Each of the Parties agrees that at all times from and after the Distribution Effective Time, if an Action is commenced by a Third Party naming two (2) or more Parties (or any member of such Parties' respective Groups) as defendants and with respect to which one or more named Parties (or any member of such Party's Group) is a nominal defendant and/or such Action is related solely to an Asset or Liability that the other Party has been assigned under this Agreement, any Ancillary Agreement or any Third Party Agreement, then the other Party or Parties shall use commercially reasonable efforts to cause such nominal defendant to be removed from such Action, as soon as reasonably practicable.

(f) The provisions of this Section 6.4 (other than this Section 6.4(f)) and Section 6.7 (other than Section 6.7(g)) shall not apply to Taxes (Taxes being governed by the Tax Matters Agreement).

Section 6.5 Indemnification Obligations Net of Insurance Proceeds and Other Amounts.

(a) Any recovery by any Party (including any of its Indemnitees) for any Indemnifiable Loss subject to indemnification pursuant to this Article VI shall be calculated (i) net of Insurance Proceeds actually received by such Party (or any of its Indemnitees) with respect to any Indemnifiable Loss and (ii) net of any proceeds actually received by such Party (or any of its Indemnitees) from any Third Party with respect to any such Liability corresponding to the Indemnifiable Loss ("Third Party Proceeds"), in the case of (i) and (ii) net of the costs of collection thereof and any increase in premium attributable thereto under applicable Third Party Policies. Accordingly, the amount which any Indemnifying Party is required to pay pursuant to this Article VI to any Indemnitee pursuant to this Article VI shall be reduced by any Insurance Proceeds or Third Party Proceeds theretofore actually recovered by or on behalf of the Indemnitee corresponding to the related Indemnifiable Loss. If an Indemnitee receives a payment required by this Agreement from an Indemnifying Party corresponding to any Indemnifiable Loss (an "Indemnity Payment") and subsequently receives Insurance Proceeds or Third Party Proceeds, then the Indemnitee shall pay to the Indemnifying Party an amount equal to the excess of the Indemnity Payment received over the amount of the Indemnity Payment that would have been due if the Insurance Proceeds or Third Party Proceeds had been received, realized or recovered before the Indemnity Payment was made.

(b) The Parties hereby agree that an insurer or other Third Party that would otherwise be obligated to pay any amount shall not be relieved of the responsibility with respect thereto or have any subrogation rights with respect thereto by virtue of any provision contained in this Agreement or any Ancillary Agreement, and that no insurer or any other Third Party shall be entitled to a "windfall" (e.g., a benefit they would not otherwise be entitled to receive, or the reduction or elimination of an insurance coverage obligation that they would otherwise have, in the absence of the indemnification or release provisions) by virtue of any provision contained in this Agreement or any Ancillary Agreement. Each Party shall, and shall cause its Subsidiaries to, use commercially reasonable efforts to collect or recover, or allow the Indemnifying Party to collect or recover, or cooperate with each other in collecting or recovering, any Insurance Proceeds that may be collectible or recoverable respecting the Liabilities for which indemnification may be available under this Article VI. Notwithstanding the foregoing, an Indemnifying Party may not delay making any indemnification payment required under the terms of this Agreement, or otherwise satisfying any indemnification obligation, pending the outcome of any Actions to collect or recover Insurance Proceeds, and an Indemnitee need not attempt to

collect any Insurance Proceeds prior to making a claim for indemnification or receiving any Indemnity Payment otherwise owed to it under this Agreement or any Ancillary Agreement.

Section 6.6 Contribution. If the indemnification provided for in this Article VI is unavailable for any reason to an Indemnitee (other than failure to provide notice with respect to any Third Party Claims in accordance with Section 6.4(b)) in respect of any Indemnifiable Loss, then the Indemnifying Party shall, in accordance with this Section 6.6, contribute to the Indemnifiable Losses incurred, paid or payable by such Indemnitee as a result of such Indemnifiable Loss in such proportion as is appropriate to reflect the relative fault of 2seventy and each other member of the 2seventy Group, on the one hand, and bluebird and each other member of the bluebird Group, on the other hand, in connection with the circumstances which resulted in such Indemnifiable Loss. Solely for purposes of determining relative fault pursuant to this Section 6.6: (i) any fault associated with information contained in the Distribution Disclosure Documents shall be deemed to be allocated to 2seventy and the other members of the 2seventy Group (other than as set forth in the definition of Excluded Liabilities); (ii) any fault associated with the conduct of the Severe Genetic Disease Business prior to the Distribution Effective Time shall be deemed to be allocated to bluebird and the other members of the bluebird Group, and no such fault shall be deemed to be the fault of 2seventy or any other member of the 2seventy Group; and (iii) any fault associated with the conduct of the Oncology Business prior to the Distribution Effective Time shall be deemed to be the fault of 2seventy and the other members of the 2seventy Group, and no such fault shall be deemed to be the fault of bluebird or any other member of the bluebird Group.

Section 6.7 Additional Matters; Survival of Indemnities.

(a) The agreements contained in this Article VI shall remain operative and in full force and effect, regardless of (i) any investigation made by or on behalf of any Indemnitee; and (ii) the knowledge by the Indemnitee of Indemnifiable Losses for which it might be entitled hereunder. The agreements contained in this Article VI shall survive the Distribution.

(b) The rights and obligations of each Party and their respective Indemnitees under this Article VI shall survive (i) the sale or other Transfer by any Party or its respective Subsidiaries of any Assets or businesses or the assignment by it of any Liabilities and (ii) any merger, consolidation, business combination, sale of all or substantially all of the Assets, restructuring, recapitalization, reorganization or similar transaction involving either Party or any of its Subsidiaries.

(c) Except to the extent set forth in any Ancillary Agreement, absent fraud or willful misconduct by an Indemnifying Party, the provisions of this Article VI shall be the sole and exclusive remedy of an Indemnitee for any monetary or compensatory damages or losses resulting from any breach of this Agreement or any Ancillary Agreement and each Indemnitee

expressly waives and relinquishes any and all rights, claims or remedies such Person may have with respect to the foregoing other than under this Article VI against any Indemnifying Party.

(d) Notwithstanding the foregoing, to the extent any Ancillary Agreement provides procedures for indemnification or contribution that differ from the provisions set forth in this Article VI, the terms of the Ancillary Agreement will govern.

(e) Any amounts payable pursuant to this Article VI shall be paid without duplication, and in no event shall any Party receive any payment in respect of an Indemnifiable Loss or receive contribution under different provisions of any Ancillary Agreement in respect of the same Liabilities.

(f) Any amount to be paid or reimbursed by an Indemnifying Party (or a member of such Party's Group) to an Indemnitee pursuant to this Article VI shall be paid in accordance with the procedures set forth in Section 10.11.

(g) The Parties shall report for all Tax purposes any amounts payable pursuant to this Article VI in accordance with Section 4.2 and Article XII of the Tax Matters Agreement.

ARTICLE VII
PRESERVATION OF RECORDS; ACCESS TO INFORMATION; CONFIDENTIALITY; PRIVILEGE

Section 7.1 Preservation of Information.

(a) Except as otherwise required or agreed in writing, or as otherwise provided in any Ancillary Agreement, with regard to any information referenced in Section 7.3, each Party shall use its commercially reasonable efforts, at its sole cost and expense, to retain such information, until the latest of, as applicable, (i) the date on which such information is no longer required to be retained pursuant to bluebird's applicable record retention policy as in effect immediately prior to the Distribution, including pursuant to any "Litigation Hold" issued by bluebird or any of its Subsidiaries prior to the Distribution, (ii) the concluding date of any period as may be required by any applicable Law, (iii) the concluding date of any period during which such information relates to a pending or threatened Action which is known to the members of the bluebird Group or 2seventy Group, as applicable, in possession of such information at the time any retention obligation with regard to such information would otherwise expire, and (iv) the concluding date of any period during which the destruction of such information could interfere with a pending or threatened investigation by a Governmental Entity which is known to the members of the bluebird Group or 2seventy Group, as applicable, in possession of such information at the time any retention obligation with regard to such information would otherwise expire; provided that with respect to any pending or threatened Action arising after the Distribution, clause (iii) of this sentence applies only to the extent that whichever member of the

bluebird Group or 2seventy Group, as applicable, is in possession of such information has been notified in writing pursuant to a "Litigation Hold" by the other Party of the relevant pending or threatened Action. The Parties agree that upon written request from either Party that certain information relating to the Oncology Business, the Severe Genetic Disease Business or the transactions contemplated hereby be retained in connection with an Action, the other Party shall use reasonable efforts to preserve and not to destroy or dispose of such information without the consent of the requesting Party.

(b) bluebird and 2seventy intend that any transfer of information that would otherwise be within the attorney-client or attorney work product privileges not operate as a waiver of any potentially applicable privilege.

Section 7.2 Financial Statements and Accounting.

(a) From the Distribution Effective Time until the completion of each Party's audit for the fiscal year ending December 31, 2021, each Party agrees to provide reasonable assistance and, subject to Section 7.6, reasonable access to its properties, books and records, other information in its possession and control and personnel, and to use its commercially reasonable efforts to cooperate with the other Party's requests, in each case to enable (i) such other Party to meet its timetable for dissemination of its earnings releases, financial statements and management's assessment of the effectiveness of its disclosure controls and procedures and its internal control over financial reporting in accordance with Items 307 and 308, respectively, of Regulation S-K, (ii) such other Party's accountants to timely complete their review of the quarterly financial statements and audit of the annual financial statements of such other Party, including, to the extent applicable to such Party, its auditor's audit, if applicable, of its internal control over financial reporting and management's assessment thereof in accordance with Section 404 of the Sarbanes-Oxley Act of 2002 and the Commission's and Public Company Accounting Oversight Board's rules and auditing standards thereunder and (iii) such other Party to respond to any written request or official comment from a Governmental Entity, including in connection with responding to a comment letter from the Commission; provided that, in connection with this clause (iii), each Party shall provide reasonable access on the terms set forth in this Section 7.2 for a period of three (3) years following the Distribution Date. For the avoidance of doubt, this Section 7.2(a) shall not limit in any manner the obligations of the Parties under any Ancillary Agreement.

(b) Nothing in this Article VII shall require any Party to violate any agreement with any Third Party regarding the confidentiality of information relating to that Third Party or its business; provided, however, that in the event that a Party is required under this Section 7.2 to disclose any such information, such Party shall use commercially reasonable efforts to seek to obtain such Third Party's written consent to the disclosure of such information.

Section 7.3 Provision of Information. Other than in circumstances in which indemnification is sought pursuant to Article VI (in which event the provisions of such Article VI shall govern) or for matters related to provision of Tax records (in which event the provisions of the Tax Matters Agreement shall govern), and subject to appropriate restrictions for Privileged Information or Confidential Information:

(a) From and after the Distribution Effective Time, and subject to compliance with the terms of the Ancillary Agreements, upon the prior written reasonable request by, and at the expense of, 2seventy for specific and identified: (i) information that relates to 2seventy or the Oncology Business, as the case may be, prior to the Distribution Effective Time; (ii) information that is necessary for 2seventy to comply with the terms of, or otherwise perform under, any Shared Contract or Ancillary Agreement to which bluebird and/or 2seventy are parties; (iii) copies of bluebird templates and form documents used in the operation of the Oncology Business; (iv) information that is otherwise required by 2seventy with regard to reasonable compliance with reporting, disclosure, filing or other requirements imposed on 2seventy (including under applicable securities laws) by a Governmental Entity having jurisdiction over 2seventy; or (v) information that is otherwise for use in any other judicial, regulatory, administrative or other proceeding or in order to satisfy audit, accounting, claims, regulatory, Action or other similar requirements, as applicable, bluebird shall provide, as soon as reasonably practicable following the receipt of such request, appropriate access or, to the extent such information is reasonably practicable to identify and extract, copies of such information, templates or forms (or the originals thereof if 2seventy has a reasonable need for such originals) in the possession or control of bluebird or any of its Subsidiaries, but only to the extent such items so relate and are not already in the possession or control of 2seventy or any of its Subsidiaries; provided that, to the extent any originals are delivered to 2seventy pursuant to this Agreement, a Shared Contract or the Ancillary Agreements, 2seventy shall, at its own expense, return them to bluebird within a reasonable time after the need to retain such originals has ceased; and provided further that, in the event that bluebird, in its sole and absolute discretion, determines that any such access or the provision of any such information, templates or forms (including information requested under Section 7.2) would violate any Law or Contract with a Third Party or waive any Privilege, bluebird shall not be obligated to provide such information requested by 2seventy (provided that bluebird shall use commercially reasonable efforts to permit compliance with its obligations under this Section 7.3 in a manner that avoids any such consequence). Notwithstanding the foregoing, bluebird shall not be obligated to provide any requested information pursuant to clause (iv) or (v) above following the date that is the fifth anniversary of the Distribution Date (or such later time or times as the Parties may agree).

(b) From and after the Distribution Effective Time, and subject to compliance with the terms of the Ancillary Agreements, upon the prior written reasonable request by, and at the expense of, bluebird for specific and identified information that: (i) relates to bluebird or the

Severe Genetic Disease Business, as the case may be, prior to the Distribution Effective Time; (ii) is necessary for bluebird to comply with the terms of, or otherwise perform under, any Shared Contract or Ancillary Agreement to which bluebird and/or 2seventy are parties; (iii) is otherwise required by bluebird with regard to reasonable compliance with reporting, disclosure, filing or other requirements imposed on bluebird (including under applicable securities laws) by a Governmental Entity having jurisdiction over bluebird; or (iv) is otherwise for use in any other judicial, regulatory, administrative or other proceeding or in order to satisfy audit, accounting, claims, regulatory, Action or other similar requirements, as applicable, 2seventy shall provide, as soon as reasonably practicable following the receipt of such request, appropriate access or, to the extent such information is reasonably practicable to identify and extract, copies of such information (or the originals thereof if bluebird has a reasonable need for such originals) in the possession or control of 2seventy or any of its Subsidiaries, but only to the extent such items so relate and are not already in the possession or control of bluebird or any of its Subsidiaries; provided that, to the extent any originals are delivered to bluebird pursuant to this Agreement, a Shared Contract or the Ancillary Agreements, bluebird shall, at its own expense, return them to 2seventy within a reasonable time after the need to retain such originals has ceased; and provided further that, in the event that 2seventy, in its sole and absolute discretion, determines that any such access or the provision of any such information (including information requested under Section 7.2) would violate any Law or Contract with a Third Party or waive any Privilege, 2seventy shall not be obligated to provide such information requested by bluebird (provided that 2seventy shall use commercially reasonable efforts to permit compliance with its obligations under this Section 7.3 in a manner that avoids any such consequence). Notwithstanding the foregoing, 2seventy shall not be obligated to provide any requested information pursuant to clause (iii) or (iv) above following the date that is the fifth anniversary of the Distribution Date (or such later time or times as the Parties may agree).

(c) In connection with the provision of information under this Section 7.3, the providing Party shall be entitled to redact any portion of the information to the extent related to any matter other than the receiving Party's business. Each of bluebird and 2seventy agree to make their respective personnel available during regular business hours to discuss the information exchanged pursuant to this Section 7.3.

Section 7.4 Witness Services; Cooperation. At all times from and after the Distribution Effective Time, each of bluebird and 2seventy shall use its commercially reasonable efforts to make available to the other Party, upon reasonable written request, its and its Subsidiaries' officers, directors, employees and agents (taking into account the business demands of such individuals) as witnesses to the extent that (i) such Persons may reasonably be required to testify in connection with the prosecution or defense of any Action in which the requesting Party may from time to time be involved (except for claims, demands or Actions in which one or more members of one Group is adverse to one or more members of the other Group) and

(ii) there is no conflict in the Action between the requesting Party and the other Party. Notwithstanding any provisions of Article VII to the contrary, after the Distribution Effective Time, each Party shall use commercially reasonable efforts to assist (or cause the other members of its Group to assist) the other with respect to any Action or potential Action upon the request of such other Party; provided that any such expenses incurred in connection therewith shall be at such other Party's sole expense.

Section 7.5 Reimbursement; Other Matters. Except to the extent otherwise contemplated by this Agreement or any Ancillary Agreement, a Party providing information, access to information or services to the other Party pursuant to this Article VII shall be entitled to receive from the recipient, upon the presentation of invoices therefor, payments for such amounts, relating to supplies, disbursements and other out-of-pocket expenses (which shall not include the costs of salaries and benefits of employees of such Party or any pro rata portion of overhead or other costs of employing such employees which would have been incurred by such employees' employer regardless of the employees' service with respect to the foregoing), as may be reasonably incurred and properly paid under applicable Law in providing such information, access to such information or services.

Section 7.6 Confidentiality.

(a) Except as otherwise provided herein, in any Ancillary Agreement, or in any Contract between a Party or its Subsidiaries, on the one hand, and their respective employees, on the other hand, each of bluebird and 2seventy shall hold, and shall cause the other members of their respective Groups and their respective Representatives to hold, in strict confidence, with at least the same degree of care that applies to bluebird's Confidential Information pursuant to policies and procedures in effect as of the Distribution Effective Time, and not disclose or release, or permit to be disclosed or released, all Confidential Information of the other Party that is either in the first Party's possession (including Confidential Information in its possession prior to the Distribution Effective Time) or furnished by the other Party or any member of its Group or their respective Representatives at any time pursuant to this Agreement or any Ancillary Agreement, and shall not use any such Confidential Information other than for such purposes as may be expressly permitted hereunder or under any Ancillary Agreement. If any Confidential Information is disclosed to any member of the other Party's Group in connection with providing services to any member of such first Party's Group under this Agreement or any Ancillary Agreement, then such disclosed Confidential Information shall be used by the applicable member of such other Party's Group only as required to provide such services.

(b) Notwithstanding anything to the contrary in this Section 7.6, each Party may disclose, or may permit disclosure of, the other Party's Confidential Information: (i) to its Representatives who have a need to know such information for non-commercial purposes and are

informed of the obligation to hold such information confidential and in respect of whose failure to comply with such obligations, the first Party will be responsible or (ii) if any Party or any other member of its Group is required or requested to disclose any such Confidential Information by judicial or administrative process or by other requirements of Law or stock exchange rule or is advised by outside counsel in connection with an Action brought by a Governmental Entity that it is advisable to do so. Notwithstanding the foregoing, in the event that any demand or request for disclosure of Confidential Information is made by a Third Party pursuant to clause (ii) above, each Party, as applicable, shall promptly notify (to the extent permissible by Law) the Party to whom the Confidential Information relates of the existence of such requirement or request and shall provide such affected Party a reasonable opportunity to seek an appropriate protective order or other remedy, which such Party (at the expense of the other Party) will cooperate in obtaining to the extent reasonably practicable. In the event that such appropriate protective order or other remedy is not obtained, the Party which faces the disclosure requirement shall furnish only that portion of the Confidential Information that is required to be disclosed and shall take commercially reasonable steps to ensure that confidential treatment is accorded such Confidential Information.

(c) Each of bluebird and 2seventy shall inform their respective Representatives who have or have access to the other Party's Confidential Information of their obligation to hold such information confidential in accordance with the provisions of this Agreement.

(d) Without limiting the foregoing, when any Confidential Information is no longer needed for the purposes contemplated by this Agreement or any Ancillary Agreement, each Party shall, at its option and as promptly as practicable after receiving a written request from the other Party, either (i) return to such other Party all such information in a tangible form (including all copies thereof and all notes, extracts or summaries based thereon) or (ii) certify to such other Party that the first Party has destroyed such information (and such copies thereof and such notes, extracts or summaries based thereon); provided that such first Party's Representatives may retain one (1) copy of such information to the extent required by applicable Law or professional standards, and shall not be required to destroy any such information located in back-up, archival electronic storage; and provided further, that any such information so retained shall remain subject to the confidentiality and non-use provisions of this Agreement or any Ancillary Agreement.

(e) Each Party acknowledges that it and its respective Subsidiaries may presently have and, following the Distribution Effective Time, may gain access to or possession of confidential or proprietary information of, or personal information relating to, Third Parties (i) that was received under confidentiality or non-disclosure agreements entered into between such Third Parties, on the one hand, and the other Party (or another member of its Group), on the other

hand, prior to the Distribution Effective Time; or (ii) that, as between the two Parties, was originally collected by the other Party (or another member of its Group) and that may be subject to and protected by privacy, data protection or other applicable Laws. Each Party agrees that it shall hold, protect and use, and shall cause the other members of its Group and its and their respective Representatives to hold, protect and use, in strict confidence the confidential and proprietary information of, or personal information relating to, Third Parties in accordance with privacy, data protection or other applicable Laws and the terms of any agreements that were either entered into before the Distribution Effective Time or affirmative commitments or representations that were made before the Distribution Effective Time by, between or among the other Party (or other member(s) of its Group), on the one hand, and such Third Parties, on the other hand.

(f) For the avoidance of doubt and notwithstanding any other provision of this Section 7.6, (i) the sharing of Privileged Information shall be governed solely by Section 7.7, and (ii) information that is subject to any confidentiality provision or other disclosure restriction in any Ancillary Agreement shall be governed by the terms of such Ancillary Agreement.

Section 7.7 Privilege Matters.

(a) The Parties recognize that legal and other professional services that have been and will be provided prior to the Distribution Effective Time have been and will be rendered for the benefit of bluebird and its Subsidiaries, including, as applicable, the members of the 2seventy Group. Accordingly, with respect to such pre-Distribution services, the Parties agree as follows:

(i) (A) bluebird shall be entitled, in perpetuity, to control the assertion or waiver of Privilege in connection with any Privileged Information that relates solely to the Severe Genetic Disease Business, whether or not the Privileged Information is in the possession or under the control of a member of the bluebird Group or the 2seventy Group and (B) bluebird shall also be entitled, in perpetuity, to control the assertion or waiver of Privilege in connection with any Privileged Information that relates solely to any bluebird Retained Liabilities, whether or not the Privileged Information is in the possession or under the control of a member of the bluebird Group or the 2seventy Group;

(ii) (A) 2seventy shall be entitled, in perpetuity, to control the assertion or waiver of Privilege in connection with any Privileged Information that relates solely to the Oncology Business, whether or not the Privileged Information is in the possession or under the control of a member of the 2seventy Group or the bluebird Group and (B) 2seventy shall also be entitled, in perpetuity, to control the assertion or waiver of Privilege in connection with any Privileged Information that relates solely to any 2seventy Liabilities, whether or not the

Privileged Information is in the possession or under the control of a member of the 2seventy Group or the bluebird Group;

(iii) If bluebird and 2seventy in good faith do not agree as to whether certain information is Privileged Information, or whether certain Privileged Information is subject to Section 7.7(a)(i) or Section 7.7(a)(ii), then the information shall be treated as Shared Privileged Information subject to Section 7.7(b);

(iv) 2seventy agrees that it shall not (and shall cause the members of its Group not to) waive, or allege or purport to waive, any Privilege which could be asserted under any applicable Law, and in which bluebird (or any member of its Group) may have a Privilege, without the written consent of bluebird; and

(v) bluebird agrees that it shall not (and shall cause the members of its Group not to) waive, or allege or purport to waive, any Privilege which could be asserted under any applicable Law, and in which 2seventy (or any member of its Group) may have a Privilege, without the written consent of 2seventy.

(b) The Parties agree that they shall have an equal right with respect to all Privileges related to legal and other professional services that have been and will be provided prior to the Distribution Effective Time not allocated pursuant to Section 7.7(a). With respect to such pre-Distribution services and related Privileged Information ("Shared Privileged Information"), the Parties agree as follows:

(i) Shared Privileged Information shall be subject to a shared Privilege among such Parties involved, or having an interest, in the claims, proceedings, litigation, disputes or other matters at issue;

(ii) No Party may (or cause or permit any member of its Group to) waive, or allege or purport to waive, any Privilege which could be asserted under any applicable Law with respect to Shared Privileged Information, without the written consent of the other Party, which shall not be unreasonably withheld, conditioned or delayed;

(iii) If a dispute arises between or among the Parties or their respective Group members regarding whether a Privilege should be waived to protect or advance the interest of any Party (or members of its Group) with respect to Shared Privileged Information, each Party agrees that it shall negotiate in good faith, shall endeavor to minimize any prejudice to the rights of the other Party and members of its Group, and shall not unreasonably withhold consent to any request for waiver by the other Party, and each Party specifically agrees that it shall not withhold consent to waive for any purpose except in good faith to protect the legitimate interests of its Group; and

(iv) If, within fifteen (15) Business Days of a Party's providing a written request to the other Party to waive a Privilege over Shared Privileged Information, the Parties have not succeeded in negotiating a resolution to any dispute regarding whether the Privilege should be waived with respect to such Shared Privileged Information, and the requesting Party determines that a Privilege should nonetheless be waived to protect or advance the legitimate interests of its Group, the requesting Party shall provide the objecting Party fifteen (15) Business Days' written notice prior to effecting such waiver. Each Party specifically agrees that failure within fifteen (15) Business Days of receipt of such notice to commence proceedings to enjoin such waiver or seek related relief, pursuant to Section 8.2(d) and under applicable Law, shall be deemed full and effective consent to such waiver. In the event proceedings are commenced as described above, the Parties agree that any such Privilege shall not be waived by either Party until the final determination of such dispute.

(c) The Parties agree that Shared Privileged Information shall continue to be held subject to Privilege from disclosure to Third Parties even if adversity of interest may subsequently be discerned or arise between Parties or their respective Group members. Further, in the event a Party or any member of its Group becomes adverse to the other Party or any member of its Group, each Party agrees that it shall not (and shall not cause or permit any member of its Group to) seek to disqualify any law firms who have or have had access to Shared Privileged Information from continuing to represent members of the other Party's Group, as applicable, solely by having, or having had access to such Shared Privileged Information.

(d) Nothing in this Section 7.7 shall be construed or interpreted to restrict the right or authority of the Parties to enter into any further written agreement concerning Privileged Information.

(e) The transfer of all information pursuant to this Agreement is made in reliance on the agreement of bluebird or 2seventy as set forth in Section 7.6 and this Section 7.7, to maintain the confidentiality of Privileged Information, and to assert and maintain any applicable Privilege according to the terms of this Section 7.7. The access to information being granted pursuant to Section 7.2 and Section 7.3, the agreement to provide witnesses and individuals pursuant to Section 7.4, the furnishing of notices and documents and other cooperative efforts contemplated by Section 6.4 and the transfer of Privileged Information between the Parties and the members of their respective Groups pursuant to this Agreement shall not be deemed a waiver of any Privilege that has been or may be asserted under this Agreement or otherwise.

Section 7.8 Conflicts Waiver. Each of the Parties acknowledges, on behalf of itself and each other member of its Group, notwithstanding anything to the contrary contained herein, that each of bluebird and 2seventy has retained Goodwin Procter LLP (collectively, the "Known Counsel") to act as its counsel in connection with this Agreement, the Ancillary Agreements and

the transactions contemplated hereby and thereby. Following the Separation, it is expected that bluebird will retain new counsel and that 2seventy will continue to retain Known Counsel in connection with this Agreement, the Ancillary Agreements and the transactions contemplated hereby and thereby. bluebird hereby agrees on behalf of itself and each member of its Group that Known Counsel may continue to represent any member of the 2seventy Group with respect to such matters. bluebird further agrees on behalf of itself and each member of its Group that, notwithstanding anything to the contrary contained herein, in the event that a dispute arises between or among (x) any member of the 2seventy Group, any 2seventy Indemnitee or any of their respective Affiliates, on the one hand, and (y) any member of the bluebird Group, any bluebird Indemnitee or any of their respective Affiliates, on the other hand, any Known Counsel may represent any member of the 2seventy Group, any 2seventy Indemnitee or any of their respective Affiliates in such dispute even though the interests of such Person may be directly adverse to any Person described in clause (y), and even though such Known Counsel may have represented a Person described in clause (y), in a matter substantially related to such dispute, or may be handling ongoing matters for a Person described in clause (y), and bluebird hereby waives, on behalf of itself and each other Person described in clause (y), as applicable, any conflict of interest in connection with such representation by such Known Counsel. Each of bluebird and 2seventy, on behalf of itself and each other member of its Group, agrees to take, and to cause their respective then-Affiliates to take, all steps necessary to implement the intent of this Section 7.8. Each of bluebird and 2seventy, on behalf of itself and each other member of its Group, further agrees that each Known Counsel and its respective partners and employees are third party beneficiaries of this Section 7.8.

Section 7.9 Ownership of Information. Any information owned by one Party or any of its Subsidiaries that is provided to a requesting Party pursuant to this Article VII shall be deemed to remain the property of the providing Party. Unless expressly set forth herein, nothing contained in this Agreement shall be construed as granting a license or other rights to any Party with respect to any such information, whether by implication, estoppel or otherwise.

Section 7.10 Other Agreements. The rights and obligations granted under this Article VII are subject to any specific limitations, qualifications or additional provisions on the sharing, exchange or confidential treatment of information set forth in any Ancillary Agreement.

ARTICLE VIII
DISPUTE RESOLUTION

Section 8.1 Negotiation. A Party seeking resolution of (i) a controversy, dispute or Action arising out of, in connection with, or in relation to the interpretation, performance, nonperformance, validity or breach of this Agreement or the Ancillary Agreements or otherwise arising out of, or in any way related to, this Agreement or the Ancillary Agreements or the transactions contemplated hereby or thereby, including any Action based on contract, tort, statute

or constitution, or (ii) a claim with respect to the inadvertent transfer or omission of an Asset or Liability as contemplated by the definition of "bluebird Retained Asset", "bluebird Retained Liability", "2seventy Asset" or "2seventy Liability", respectively (collectively, "Disputes"), shall provide written notice of such Dispute to the other Party, specifying the terms of such Dispute in reasonable detail ("Dispute Notice"). The appropriate executives of the Parties who have authority to settle the Dispute (or such other individuals designated by the respective executives) shall attempt to resolve the Dispute through good faith negotiation for a reasonable period of time; provided that such reasonable period shall not, unless otherwise agreed by the Parties in writing, exceed thirty (30) days from the time of receipt by a Party of the Dispute Notice. If the Dispute has not been resolved within fifteen (15) days after receipt of the Dispute Notice, the respective Chief Executive Officers or their respective designees (with full settlement authority) of bluebird and 2seventy shall meet in person (or where necessary, by phone) at a mutually acceptable time and, if applicable, place, and thereafter as often as they reasonably deem necessary, to attempt in good faith to resolve the Dispute. Any contractual time period or deadline under this Agreement or any Ancillary Agreement to which such Dispute relates occurring after the Dispute Notice is received shall not be deemed to have passed until such Dispute has been resolved pursuant to this Article VIII.

Section 8.2 Arbitration.

(a) Claims. Any Dispute that is not resolved pursuant to Section 8.1 within thirty (30) days after receipt of a Dispute Notice shall be resolved by final and binding arbitration before a panel of three (3) arbitrators with relevant industry experience (the "Arbitrators"). One (1) Arbitrator shall be chosen by bluebird and one (1) Arbitrator shall be chosen by 2seventy within forty-five (45) of receipt of a Dispute Notice. The third (3rd) Arbitrator shall be chosen by mutual agreement of the Arbitrator chosen by bluebird and the Arbitrator chosen by 2seventy within fifteen (15) days of the date that the last of such Arbitrators was appointed. The arbitration shall be administered by the International Chamber of Commerce (the "Administrator") in accordance with its then existing arbitrator rules or procedures regarding commercial or business disputes. The arbitration shall be held in Boston, Massachusetts. The Arbitrators shall be instructed by the Parties to complete the arbitration within ninety (90) days after selection of the third (3rd) Arbitrator, subject to extension by written agreement executed by both Parties.

(b) Arbitrators' Award. The Arbitrators shall, within fifteen (15) days after the conclusion of the arbitration hearing, issue a written award and statement of decision describing the essential findings and conclusions on which the award is based, including the calculation of any damages awarded. The decision or award rendered by the Arbitrators shall be final, binding, conclusive and non-appealable, and judgment may be entered upon it in accordance with the Laws of the State of Delaware or any other court of competent jurisdiction.

The Arbitrators shall be authorized to award compensatory damages, but shall not be authorized (i) to award non-economic damages, such as for emotional distress, pain and suffering or loss of consortium, (ii) to award punitive damages, or (iii) to reform, modify or materially change this Agreement or the Ancillary Agreements; provided, however, that the limitations described in the foregoing clauses (i) and (ii) shall not apply if such damages are statutorily imposed.

(c) Costs. Each Party shall bear its own attorney's fees, costs and disbursements arising out of the arbitration and the costs of the Arbitrator selected by it, and shall pay an equal share of the fees and costs of the third (3rd) Arbitrator; provided, however, that the Arbitrators shall be authorized to determine whether a Party is the prevailing Party, and if so, to award to that prevailing Party reimbursement for its reasonable attorneys' fees, costs and disbursements (including, for example, expert witness fees and expenses, photocopy charges, travel expenses, etc.), and/or the fees and costs of the Administrator and the Arbitrators.

(d) Injunctive or Other Equity Relief. Nothing contained in this Agreement shall deny any Party the right to seek injunctive or other equitable relief in the context of a bona fide emergency or prospective irreparable harm, and such an action may be filed and maintained notwithstanding any ongoing arbitration proceeding; provided, however, that any other relief not expressly permitted under this Section 8.2(d) must be pursued in accordance with Section 8.2(a), with all remedies being cumulative to the extent allowed by applicable Law. The Parties further agree that irreparable harm would occur, and thus need not be established, in an action to enforce the confidentiality obligations of Section 7.6 or to resolve a privilege dispute under Section 7.7(b)(iv), and that such action may be brought pursuant to this Section 8.2(d). The Parties further agree that any action brought under this Section 8.2(d) shall be brought exclusively in the courts within the State of Delaware set forth in Section 10.16, and that such courts shall have personal jurisdiction over the Parties in such action.

Section 8.3 Continuity of Service and Performance. Unless otherwise agreed in writing, the Parties shall continue to provide service and honor all other commitments under this Agreement, any Shared Contract and each Ancillary Agreement during a Dispute with respect to all matters not subject to such Dispute.

ARTICLE IX
INSURANCE MATTERS

Section 9.1 Rights to bluebird Policies.

(a) 2seventy acknowledges and agrees that, from and after the Distribution Effective Time, except as expressly provided in this Agreement or any Ancillary Agreement, neither 2seventy nor any member of the 2seventy Group shall have any rights to or under any Policies of bluebird, other than any insurance Policies acquired prior to the Distribution Effective

Time, including any renewal or tail period thereof, directly by and in the name of 2seventy or a member of the 2seventy Group or as expressly provided in Section 6.5 or this Article IX. For the avoidance of doubt, 2seventy acknowledges and agrees that the 2seventy Group and not any member of the bluebird Group shall be responsible for establishing any and all insurance programs covering the 2seventy Group for its activities after the Distribution Effective Time as may be required to comply with the 2seventy Group's contractual obligations and such other insurance Policies required by Law or as necessary or appropriate to operate the Oncology Business, including with respect to general liability, product liability, workers' compensation, directors' and officers' liability and fiduciary liability.

(b) The Parties acknowledge that, as of the Distribution Date, bluebird's director and officer liability insurance policies will continue to provide insurance coverage for directors and officers of 2seventy who served as directors or officers of bluebird or any of its Subsidiaries prior to the Distribution Effective Time, but such coverage shall only extend to acts occurring prior to the Distribution Effective Time that would have been covered by bluebird's director and officer liability insurance policy if such individual remained a director or officer of bluebird. Such coverage shall also extend to employees with respect to securities law claims only. bluebird agrees not to terminate or amend this coverage in a manner materially adverse to these individuals.

(c) This Agreement shall not be considered as an attempted assignment of any insurance Policy or as a contract of insurance and shall not be construed to waive any right or remedy of any member of the bluebird Group in respect of any of the bluebird insurance Policies and programs or any other contract or policy of insurance. Except as set forth in Section 9.1(b), the bluebird Group may, at any time, without liability or obligation to any member of the 2seventy Group, amend, commute, terminate, buy-out, extinguish liability under or otherwise modify any insurance Policies (and claims of the 2seventy Group pursuant to this Article IX shall be subject to any such amendments, commutations, terminations, buy-outs, extinguishments and modifications).

(d) No member of the bluebird Group shall have any obligation to secure extended reporting for any claims under any of the bluebird Group's claims-made or occurrence-reported liability policies for any acts or omissions by any member of the 2seventy Group occurring prior to the Distribution Effective Time.

Section 9.2 Claims. Nothing in this Article IX will be construed to limit or otherwise alter in any way the indemnity obligations of the Parties, including (i) with respect to the 2seventy Group, 2seventy Liabilities, (ii) with respect to the bluebird Group, bluebird Retained Liabilities and (iii) those created by this Agreement, by operation of law or otherwise. The Parties acknowledge that bluebird has used its commercially reasonable efforts to structure its director and officer insurance Policies consistent with such indemnity obligations.

ARTICLE X
MISCELLANEOUS

Section 10.1 Complete Agreement; Construction; Enforceability.

(a) This Agreement, including the Exhibits and Schedules, and the Ancillary Agreements shall constitute the entire agreement between the Parties with respect to the subject matter hereof and shall supersede all previous negotiations, commitments, course of dealings and writings with respect to such subject matter. In the event of any inconsistency between this Agreement and any Schedule hereto, the Schedule shall prevail unless the relevant term or provision in the body of this Agreement expressly provides that the term or provision in it is to take precedence over the term or provision in the Schedule. In the event and to the extent that there shall be a conflict or inconsistency between the provisions of this Agreement and the provisions of any Ancillary Agreement, this Agreement shall control (except with respect to the Tax Matters Agreement, the IP License Agreement and the Employee Matters Agreement, in which case such Ancillary Agreement shall control). Except as expressly set forth in this Agreement or any Ancillary Agreement: (i) all matters to the extent relating to Taxes and Tax Returns of the Parties and their respective Subsidiaries shall be governed exclusively by the Tax Matters Agreement; and (ii) for the avoidance of doubt, in the event of any conflict between this Agreement or any Ancillary Agreement, on the one hand, and the Tax Matters Agreement, on the other hand, with respect to such matters, the terms and conditions of the Tax Matters Agreement shall govern.

(b) bluebird represents on behalf of itself and each other member of the bluebird Group, and 2seventy represents on behalf of itself and each other member of the 2seventy Group, as follows:

(i) each such Person has the requisite corporate or other power and authority and has taken all corporate or other action necessary in order to execute, deliver and perform this Agreement and each Ancillary Agreement to which it is a party and to consummate the transactions contemplated hereby and thereby; and

(ii) this Agreement and each Ancillary Agreement to which it is a party has been (or, in the case of any Ancillary Agreement, will be on or prior to the Distribution Date) duly executed and delivered by it and constitutes, or will constitute, a valid and binding agreement of it enforceable in accordance with its terms.

Section 10.2 Transaction Agreements. Except as expressly set forth herein, this Agreement is not intended to address, and should not be interpreted to address, the matters specifically and expressly covered by the other Transaction Agreements.

Section 10.3 Counterparts. This Agreement may be executed in one or more counterparts, all of which shall be considered one and the same agreement, and shall become effective when one or more such counterparts have been signed by each of the Parties and delivered to each of the Parties. Counterparts may be delivered via electronic mail (including pdf or any electronic signature complying with the U.S. federal ESIGN Act of 2000, e.g., www.docusign.com) or other transmission method and any counterpart so delivered shall be deemed to have been duly and validly delivered and be valid and effective for all purposes.

Section 10.4 Survival of Agreements. Except as otherwise contemplated by this Agreement or any Ancillary Agreement, all covenants and agreements of the Parties (including the representations and warranties of the Parties set forth in Section 10.1 hereof) contained in this Agreement and each Ancillary Agreement shall survive the Distribution Effective Time and remain in full force and effect in accordance with their applicable terms.

Section 10.5 Fees, Costs and Expenses.

(a) Except as otherwise agreed to in writing by the Parties, all out-of-pocket fees, costs and expenses incurred at or prior to the Distribution Effective Time in connection with, and as required by, the preparation, execution, delivery and implementation of this Agreement and any Ancillary Agreement, the Distribution Disclosure Documents and the consummation of the transactions contemplated hereby and thereby, including the Separation, shall be borne and paid by bluebird.

(b) Except as otherwise expressly provided in this Agreement (including this Section 10.5) or any Ancillary Agreement, as otherwise agreed to in writing by the Parties, each Party shall bear its own out-of-pocket fees, costs and expenses incurred or accrued after the Distribution Effective Time; provided, however, that, except as otherwise expressly provided in this Agreement, any fees, costs and expenses incurred in obtaining any Consents or novation from a Third Party in connection with the Transfer to or Assumption by a Party or its Subsidiary of any Assets or Liabilities in connection with the Separation shall be borne by the Party or its Subsidiary to which such Assets are being Transferred or which is Assuming such Liabilities; and provided further that bluebird shall bear the expense of all recordation of Intellectual Property Transferred at or prior to the Distribution Effective Time pursuant to this Agreement, whether such recordation occurs prior to or after the Distribution Effective Time.

(c) With respect to any post-Distribution expenses incurred pursuant to a request for further assurances granted under Section 2.7, the Parties agree that any and all fees, costs and expenses incurred by either Party shall be borne and paid by the requesting Party; it being understood that no Party shall be obliged to incur any Third Party accounting, consulting, advisor, banking or legal fees, costs or expenses, and the requesting Party shall not be obligated

to pay such fees, costs or expenses, unless such fee, cost or expense shall have had the prior written approval of the requesting Party.

(d) Notwithstanding the foregoing, each Party shall be responsible for paying its own internal fees, costs and expenses.

Section 10.6 Notices. All notices, requests, claims, demands and other communications under this Agreement and, to the extent applicable and unless otherwise provided therein, under each of the Ancillary Agreements shall be in writing and shall be given or made (and shall be deemed to have been duly given or made upon receipt) by delivery in person, by overnight courier service, by facsimile or email with receipt confirmed (followed by delivery of an original via overnight courier service) or by registered or certified mail (postage prepaid, return receipt requested) to the respective Parties at the following addresses (or at such other address for a Party as shall be specified in a notice given in accordance with this Section 10.6):

To bluebird:

bluebird bio, Inc.
60 Binney Street
Cambridge, MA 02142
Attn: General Counsel
Facsimile:
Email:

To 2seventy:

2seventy bio, Inc.
60 Binney Street
Cambridge, MA 02142
Attn: General Counsel
Facsimile:
Email:

Section 10.7 Waivers. The delay or failure of either Party to exercise or enforce any of its rights under this Agreement will not constitute, or be deemed to be, a waiver of those rights, nor will any single or partial exercise of any such rights preclude any other or further exercise thereof or the exercise of any other right. No waiver of any provision of this Agreement will be effective unless it is in writing and signed by the Party against which it is being enforced.

Section 10.8 Assignment. No Party may assign any rights or delegate any obligations arising under this Agreement, in whole or in part, directly or indirectly, without the prior written consent of the other Party (such consent not to be unreasonably withheld, conditioned or

delayed), and any attempt to so assign any rights or delegate any obligations arising under this Agreement without such consent shall be void. Notwithstanding the foregoing, no such consent shall be required for any such assignment or delegation (i) with respect to bluebird, to a Subsidiary of bluebird (so long as such Subsidiary remains a Subsidiary of bluebird), (ii) with respect to 2seventy, to a Subsidiary of 2seventy (so long as such Subsidiary remains a Subsidiary of 2seventy) or (iii) to a *bona fide* Third Party in connection with a merger, reorganization, consolidation or the sale of all or substantially all the assets of a Party so long as the resulting, surviving or transferee entity assumes all the obligations of the assigning Party by operation of Law or pursuant to an agreement in form and substance reasonably satisfactory to the non-assigning Party; provided, however, that in the case of each of the preceding clauses (i) and (ii), no assignment permitted by this Section 10.8 shall release the assigning Party from liability for the full performance of its obligations under this Agreement.

Section 10.9 Successors and Assigns. The provisions of this Agreement and the obligations and rights hereunder shall be binding upon, inure to the benefit of and be enforceable by (and against) the Parties and their respective successors (whether by merger, acquisition of assets or otherwise) and permitted assigns.

Section 10.10 Termination and Amendment. This Agreement (including Article VI hereof) may be terminated, modified or amended, and the Distribution may be amended, modified or abandoned, at any time prior to the Distribution Effective Time by and in the sole and absolute discretion of bluebird without the approval of 2seventy or the stockholders of bluebird. In the event of such termination, no Party shall have any liability of any kind to the other Party or any other Person by reason of such termination. After the Distribution Effective Time, this Agreement may not be terminated, modified or amended except by an agreement in writing signed by bluebird and 2seventy.

Section 10.11 Payment Terms.

(a) Except as set forth in Article VI or as otherwise expressly provided to the contrary in this Agreement or in any Ancillary Agreement, any amount to be paid or reimbursed by a Party (and/or a member of such Party's Group) to the other Party (and/or a member of such other Party's Group) under this Agreement shall be paid or reimbursed hereunder within sixty (60) days after presentation of an invoice or a written demand therefor, in either case setting forth, or accompanied by, reasonable documentation or other reasonable explanation supporting such amount.

(b) Except as set forth in Article VI or as expressly provided to the contrary in this Agreement or in any Ancillary Agreement, any amount not paid when due pursuant to this Agreement (and any amount billed or otherwise invoiced or demanded and properly payable that is not paid within sixty (60) days of such bill, invoice or other demand) shall bear interest at a

rate per annum equal to the Prime Rate, from time to time in effect, plus two percent (2%), calculated for the actual number of days elapsed, accrued from the date on which such payment was due up to the date of the actual receipt of payment.

(c) Without the consent of the Party receiving any payment under this Agreement specifying otherwise, all payments to be made by either bluebird or 2seventy under this Agreement shall be made in U.S. dollars. Except as expressly provided herein, any amount which is not expressed in U.S. dollars shall be converted into U.S. dollars by using the exchange rate published on Bloomberg at 5:00 p.m., Eastern time, on the day before the relevant date, or in *The Wall Street Journal*, Eastern Edition, on such date if not so published on Bloomberg. Except as expressly provided herein, in the event that any indemnification payment required to be made hereunder or under any Ancillary Agreement may be denominated in a currency other than U.S. dollars, the amount of such payment shall be converted into U.S. dollars on the date notice of the claim is given to the Indemnifying Party.

Section 10.12 Subsidiaries. Each of the Parties shall cause to be performed, and hereby guarantees the performance of, all actions, agreements and obligations set forth herein to be performed by any Subsidiary of such Party or by any entity that becomes a Subsidiary of such Party at or after the Distribution Effective Time, in each case to the extent such Subsidiary remains a Subsidiary of the applicable Party.

Section 10.13 Third Party Beneficiaries. Except (i) as provided in Article VI relating to Indemnitees and for the releases under Section 6.1 of any Person as provided therein and (ii) as specifically provided in Section 7.8 hereof or in any Ancillary Agreement, this Agreement is solely for the benefit of the Parties and shall not be deemed to confer upon any Person other than the Parties any remedy, claim, liability, reimbursement, cause of Action or other right beyond any that exist without reference to this Agreement.

Section 10.14 Titles and Headings. Titles and headings to sections herein are inserted for the convenience of reference only and are not intended to be a part of or to affect the meaning or interpretation of this Agreement.

Section 10.15 Schedules.

(a) The Schedules shall be construed with and as an integral part of this Agreement to the same extent as if the same had been set forth verbatim herein.

(b) Subject to the prior written consent of the other Party (not to be unreasonably withheld, conditioned or delayed), each Party shall be entitled to update the Schedules from and after the date hereof until the Distribution Effective Time.

Section 10.16 Governing Law. This Agreement will be governed by, construed and interpreted in accordance with the Laws of the State of Delaware, without reference to principles of conflicts of Laws. Each Party irrevocably consents to the exclusive jurisdiction, forum and venue of the Delaware Court of Chancery (and if the Delaware Court of Chancery shall be unavailable, any Delaware State court or the federal court sitting in the State of Delaware) over any and all claims, disputes, controversies or disagreements between the Parties under or related to this Agreement or any of the transactions contemplated hereby, including their execution, performance or enforcement, whether in contract, tort or otherwise. Each of the Parties hereby agrees that it shall not assert, and shall hereby waive, any claim or right or defense that it is not subject to the jurisdiction of such courts, that the venue is improper, that the forum is inconvenient or any similar objection, claim or argument.

Section 10.17 Severability. In the event any one or more of the provisions contained in this Agreement should be held invalid, illegal or unenforceable in any respect, the validity, legality and enforceability of the remaining provisions contained herein and therein shall not in any way be affected or impaired thereby. The Parties shall endeavor in good-faith negotiations to replace the invalid, illegal or unenforceable provisions with valid provisions, the economic effect of which comes as close as possible to that of the invalid, illegal or unenforceable provisions.

Section 10.18 Public Announcements. From and after the Distribution Effective Time, bluebird and 2seventy shall consult with each other before issuing, and each shall give the other the opportunity to review and comment upon, that portion of any press release or other public statement, including a statement made to its investors, that relates to the transactions contemplated by this Agreement or the Ancillary Agreements, and shall not issue any such press release or make any such public statement prior to such consultation, except (a) as may be required by applicable Law, court process or obligations pursuant to any listing agreement with any national securities exchange or national securities quotation system; (b) for disclosures made that are substantially identical to disclosure contained in any Distribution Disclosure Document or any prior written public statement not made in violation of this Section 10.18; or (c) with respect to a Party, for disclosure concerning the ordinary course operation of such Party's business (other than any Dispute), notwithstanding that the disclosure may relate to arrangements under the Transition Services Agreements (including the exhibits and schedules thereto).

Section 10.19 Interpretation. The Parties have participated jointly in the negotiation and drafting of this Agreement. This Agreement shall be construed without regard to any presumption or rule requiring construction or interpretation against the Party drafting or causing any instrument to be drafted.

Section 10.20 No Duplication; No Double Recovery. Nothing in this Agreement or any Ancillary Agreement is intended to confer to or impose upon any Party a duplicative right,

entitlement, obligation or recovery with respect to any matter arising out of the same facts and circumstances (including with respect to the rights, entitlements, obligations and recoveries that may arise out of one or more of Section 6.2, Section 6.3, Section 6.4, Section 6.5 and Section 6.6).

Section 10.21 No Admission of Liability. The allocation of Assets and Liabilities herein (including on the Schedules hereto) is solely for the purpose of allocating such Assets and Liabilities between bluebird and 2seventy and is not intended as an admission of liability or responsibility for any alleged Liabilities vis-à-vis any Third Party.

[Signature Page Follows]

IN WITNESS WHEREOF, the Parties have caused this Agreement to be duly executed as of the day and year first above written.

BLUEBIRD BIO, INC.

By: /s/ Andrew Obenshain
Name: Andrew Obenshain
Title: President, Severe Genetic Diseases

2SEVENTY BIO INC.

By: /s/ Nick Leschly
Name: Nick Leschly
Title: President

AMENDED AND RESTATED

CERTIFICATE OF INCORPORATION

OF

2SEVENTY BIO, INC.

2seventy bio, Inc., a corporation organized and existing under the laws of the State of Delaware (the "Corporation"), hereby certifies as follows:

1. The name of the Corporation is 2seventy bio, Inc. The date of the filing of its original Certificate of Incorporation with the Secretary of State of the State of Delaware was April 26, 2021 (the "Original Certificate").

2. This Amended and Restated Certificate of Incorporation (the "Certificate") amends, restates and integrates the provisions of the Certificate of Incorporation that was filed with the Secretary of State of the State of Delaware on April 26, 2021 (the "Amended and Restated Certificate"), and was duly adopted in accordance with the provisions of Sections 228, 242 and 245 of the General Corporation Law of the State of Delaware (the "DGCL").

3. The text of the Amended and Restated Certificate is hereby amended and restated in its entirety to provide as herein set forth in full.

ARTICLE I

The name of the Corporation is 2seventy bio, Inc.

ARTICLE II

The address of the Corporation's registered office is 251 Little Falls Drive, in the City of Wilmington, County of New Castle, State of Delaware 19808. The name of its registered agent at such address is Corporation Service Company.

ARTICLE III

The purpose of the Corporation is to engage in any lawful act or activity for which corporations may be organized under the DGCL.

ARTICLE IV

CAPITAL STOCK

The total number of shares of capital stock which the Corporation shall have authority to issue is Two Hundred Ten Million (210,000,000), of which (i) Two Hundred Million (200,000,000) shares shall be a class designated as common stock, par value $0.0001 per share (the "Common Stock"), and (ii) Ten Million (10,000,000) shares shall be a class designated as undesignated preferred stock, par value $0.0001 per share (the "Undesignated Preferred Stock").

Except as otherwise provided in any certificate of designations of any series of Undesignated Preferred Stock, the number of authorized shares of the class of Common Stock or Undesignated Preferred Stock may from time to time be increased or decreased (but not below the number of shares of such class outstanding) by the affirmative vote of the holders of a majority in voting power of the outstanding shares of capital stock of the Corporation irrespective of the provisions of Section 242(b)(2) of the DGCL.

The powers, preferences and rights of, and the qualifications, limitations and restrictions upon, each class or series of stock shall be determined in accordance with, or as set forth below in, this Article IV.

A. COMMON STOCK

Subject to all the rights, powers and preferences of the Undesignated Preferred Stock and except as provided by law or in this Certificate (or in any certificate of designations of any series of Undesignated Preferred Stock):

(a) the holders of the Common Stock shall have the exclusive right to vote for the election of directors of the Corporation (the "Directors") and on all other matters requiring stockholder action, each outstanding share entitling the holder thereof to one vote on each matter properly submitted to the stockholders of the Corporation for their vote; provided, however, that, except as otherwise required by law, holders of Common Stock, as such, shall not be entitled to vote on any amendment to this Certificate (or on any amendment to a certificate of designations of any series of Undesignated Preferred Stock) that alters or changes the powers, preferences, rights or other terms of one or more outstanding series of Undesignated Preferred Stock if the holders of such affected series of Undesignated Preferred Stock are entitled to vote, either separately or together with the holders of one or more other such series, on such amendment pursuant to this Certificate (or pursuant to a certificate of designations of any series of Undesignated Preferred Stock) or pursuant to the DGCL;

(b) dividends may be declared and paid or set apart for payment upon the Common Stock out of any assets or funds of the Corporation legally available for the payment of dividends, but only when and as declared by the Board of Directors or any authorized committee thereof; and

(c) upon the voluntary or involuntary liquidation, dissolution or winding up of the Corporation, the net assets of the Corporation shall be distributed pro rata to the holders of the Common Stock.

B. UNDESIGNATED PREFERRED STOCK

The Board of Directors or any authorized committee thereof is expressly authorized, to the fullest extent permitted by law, to provide by resolution or resolutions for, out of the unissued shares of Undesignated Preferred Stock, the issuance of the shares of Undesignated Preferred Stock in one or more series of such stock, and by filing a certificate of designations pursuant to applicable law of the State of Delaware, to establish or change from time to time the number of shares of each such series, and to fix the designations, powers, including voting powers, full or limited, or no voting powers, preferences and the relative,

participating, optional or other special rights of the shares of each series and any qualifications, limitations and restrictions thereof.

ARTICLE V

STOCKHOLDER ACTION

1. Action without Meeting. Any action required or permitted to be taken by the stockholders of the Corporation at any annual or special meeting of stockholders of the Corporation must be effected at a duly called annual or special meeting of stockholders and may not be taken or effected by a written consent of stockholders in lieu thereof. Notwithstanding anything herein to the contrary, the affirmative vote of not less than two-thirds (2/3) of the outstanding shares of capital stock entitled to vote thereon, and the affirmative vote of not less than two-thirds (2/3) of the outstanding shares of each class entitled to vote thereon as a class, shall be required to amend or repeal any provision of this Article V, Section 1.

2. Special Meetings. Except as otherwise required by statute and subject to the rights, if any, of the holders of any series of Undesignated Preferred Stock, special meetings of the stockholders of the Corporation may be called only by the Board of Directors acting pursuant to a resolution approved by the affirmative vote of a majority of the Directors then in office, and special meetings of stockholders may not be called by any other person or persons. Only those matters set forth in the notice of the special meeting may be considered or acted upon at a special meeting of stockholders of the Corporation.

ARTICLE VI

DIRECTORS

1. General. The business and affairs of the Corporation shall be managed by or under the direction of the Board of Directors except as otherwise provided herein or required by law.

2. Election of Directors. Election of Directors need not be by written ballot unless the By-laws of the Corporation (the "By-laws") shall so provide.

3. Number of Directors; Term of Office. The number of Directors of the Corporation shall be fixed solely and exclusively by resolution duly adopted from time to time by the Board of Directors. The Directors, other than those who may be elected by the holders of any series of Undesignated Preferred Stock, shall be classified, with respect to the term for which they severally hold office, into three classes. The initial Class I Directors of the Corporation shall be Nick Leschly and Ramy Ibrahim; the initial Class II Directors of the Corporation shall be Daniel Lynch, William Sellers and Sarah Glickman; and the initial Class III Directors of the Corporation shall be Denice Torres and Marcela Maus. The initial Class I Directors shall serve for a term expiring at the annual meeting of stockholders to be held in 2022, the initial Class II Directors shall serve for a term expiring at the annual meeting of stockholders to be held in 2023, and the initial Class III Directors shall serve for a term expiring at the annual meeting of stockholders to be held in 2024. At each annual meeting of stockholders, Directors elected to succeed those Directors whose terms expire shall be elected for a term of office to expire at the

third succeeding annual meeting of stockholders after their election. Notwithstanding the foregoing, the Directors elected to each class shall hold office until their successors are duly elected and qualified or until their earlier resignation, death or removal.

Notwithstanding the foregoing, whenever, pursuant to the provisions of Article IV of this Certificate, the holders of any one or more series of Undesignated Preferred Stock shall have the right, voting separately as a series or together with holders of other such series, to elect Directors at an annual or special meeting of stockholders, the election, term of office, filling of vacancies and other features of such directorships shall be governed by the terms of this Certificate and any certificate of designations applicable to such series.

Notwithstanding anything herein to the contrary, the affirmative vote of not less than two-thirds (2/3) of the outstanding shares of capital stock entitled to vote thereon, and the affirmative vote of not less than two-thirds (2/3) of the outstanding shares of each class entitled to vote thereon as a class, shall be required to amend or repeal any provision of this Article IV, Section 3.

4. Vacancies. Subject to the rights, if any, of the holders of any series of Undesignated Preferred Stock to elect Directors and to fill vacancies in the Board of Directors relating thereto, any and all vacancies in the Board of Directors, however occurring, including, without limitation, by reason of an increase in the size of the Board of Directors, or the death, resignation, disqualification or removal of a Director, shall be filled solely and exclusively by the affirmative vote of a majority of the remaining Directors then in office, even if less than a quorum of the Board of Directors, and not by the stockholders. Any Director appointed in accordance with the preceding sentence shall hold office for the remainder of the full term of the class of Directors in which the new directorship was created or the vacancy occurred and until such Director's successor shall have been duly elected and qualified or until his or her earlier resignation, death or removal. Subject to the rights, if any, of the holders of any series of Undesignated Preferred Stock to elect Directors, when the number of Directors is increased or decreased, the Board of Directors shall, subject to Article VI.3 hereof, determine the class or classes to which the increased or decreased number of Directors shall be apportioned; provided, however, that no decrease in the number of Directors shall shorten the term of any incumbent Director. In the event of a vacancy in the Board of Directors, the remaining Directors, except as otherwise provided by law, shall exercise the powers of the full Board of Directors until the vacancy is filled.

5. Removal. Subject to the rights, if any, of any series of Undesignated Preferred Stock to elect Directors and to remove any Director whom the holders of any such series have the right to elect, any Director (including persons elected by Directors to fill vacancies in the Board of Directors) may be removed from office (i) only with cause and (ii) only by the affirmative vote of the holders not less than two-thirds (2/3) of the outstanding shares of capital stock then entitled to vote at an election of Directors. At least forty-five (45) days prior to any annual or special meeting of stockholders at which it is proposed that any Director be removed from office, written notice of such proposed removal and the alleged grounds thereof shall be sent to the Director whose removal will be considered at the meeting.

ARTICLE VII

LIMITATION OF LIABILITY

A Director of the Corporation shall not be personally liable to the Corporation or its stockholders for monetary damages for breach of his or her fiduciary duty as a Director, except for liability (a) for any breach of the Director's duty of loyalty to the Corporation or its stockholders, (b) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (c) under Section 174 of the DGCL or (d) for any transaction from which the Director derived an improper personal benefit. If the DGCL is amended after the effective date of this Certificate to authorize corporate action further eliminating or limiting the personal liability of Directors, then the liability of a Director of the Corporation shall be eliminated or limited to the fullest extent permitted by the DGCL, as so amended.

Any amendment, repeal or modification of this Article VII by either of (i) the stockholders of the Corporation or (ii) an amendment to the DGCL, shall not adversely affect any right or protection existing at the time of such amendment, repeal or modification with respect to any acts or omissions occurring before such amendment, repeal or modification of a person serving as a Director at the time of such amendment, repeal or modification.

Notwithstanding anything herein to the contrary, the affirmative vote of not less than two-thirds (2/3) of the outstanding shares of capital stock entitled to vote thereon, and the affirmative vote of not less than two-thirds (2/3) of the outstanding shares of each class entitled to vote thereon as a class, shall be required to amend or repeal any provision of this Article VII.

ARTICLE VIII

AMENDMENT OF BY-LAWS

1. Amendment by Directors. Except as otherwise provided by law, the By-laws of the Corporation may be amended or repealed by the Board of Directors by the affirmative vote of a majority of the Directors then in office.

2. Amendment by Stockholders**.** Except as otherwise provided therein, the By-laws of the Corporation may be amended or repealed at any annual meeting of stockholders, or special meeting of stockholders called for such purpose, by the affirmative vote of at least not less than two-thirds (2/3) of the outstanding shares of capital stock entitled to vote on such amendment or repeal, voting together as a single class, provided, however, that if the Board of Directors recommends that stockholders approve such amendment or repeal at such meeting of stockholders, such amendment or repeal shall only require the affirmative vote of the majority of the outstanding shares of capital stock entitled to vote on such amendment or repeal, voting together as a single class.

ARTICLE IX

AMENDMENT OF CERTIFICATE OF INCORPORATION

The Corporation reserves the right to amend or repeal this Certificate in the manner now or hereafter prescribed by statute and this Certificate, and all rights conferred upon stockholders herein are granted subject to this reservation. Except as otherwise required by this Certificate or by law, whenever any vote of the holders of capital stock of the Corporation is required to amend or repeal any provision of this Certificate, such amendment or repeal shall require the affirmative vote of the majority of the outstanding shares of capital stock entitled to vote on such amendment or repeal, and the affirmative vote of the majority of the outstanding shares of each class entitled to vote thereon as a class, at a duly constituted meeting of stockholders called expressly for such purpose.

[End of Text]

THIS AMENDED AND RESTATED CERTIFICATE OF INCORPORATION is executed as of this 1st day of November, 2021.

2seventy bio, Inc.

By: /s/ Nick Leschly
Name: Nick Leschly
Title: President and Chief Executive Officer

AMENDED AND RESTATED

BY-LAWS

OF

2SEVENTY BIO, INC.

(the "Corporation")

ARTICLE I

Stockholders

SECTION 1. Annual Meeting. The annual meeting of stockholders (any such meeting being referred to in these By-laws as an "Annual Meeting") shall be held at the hour, date and place within or without the United States which is fixed by the Board of Directors, which time, date and place may subsequently be changed at any time by vote of the Board of Directors. If no Annual Meeting has been held for a period of thirteen (13) months after the Corporation's last Annual Meeting, a special meeting in lieu thereof may be held, and such special meeting shall have, for the purposes of these By-laws or otherwise, all the force and effect of an Annual Meeting. Any and all references hereafter in these By-laws to an Annual Meeting or Annual Meetings also shall be deemed to refer to any special meeting(s) in lieu thereof.

SECTION 2. Notice of Stockholder Business and Nominations.

(a) Annual Meetings of Stockholders.

(1) Nominations of persons for election to the Board of Directors of the Corporation and the proposal of other business to be considered by the stockholders may be brought before an Annual Meeting (i) by or at the direction of the Board of Directors or (ii) by any stockholder of the Corporation who was a stockholder of record at the time of giving of notice provided for in this By-law, who is entitled to vote at the meeting, who is present (in person or by proxy) at the meeting and who complies with the notice procedures set forth in this By-law as to such nomination or business. For the avoidance of doubt, the foregoing clause (ii) shall be the exclusive means for a stockholder to bring nominations or business properly before an Annual Meeting (other than matters properly brought under Rule 14a-8 (or any successor rule) under the Securities Exchange Act of 1934, as amended (the "Exchange Act")), and such stockholder must comply with the notice and other procedures set forth in Article I, Section 2(a)(2) and (3) of this By-law to bring such nominations or business properly before an Annual Meeting. In addition to the other requirements set forth in this By-law, for any proposal of business to be considered

at an Annual Meeting, it must be a proper subject for action by stockholders of the Corporation under Delaware law.

(2) For nominations or other business to be properly brought before an Annual Meeting by a stockholder pursuant to clause (ii) of Article I, Section 2(a)(1) of this By-law, the stockholder must (i) have given Timely Notice (as defined below) thereof in writing to the Secretary of the Corporation, (ii) have provided any updates or supplements to such notice at the times and in the forms required by this By-law and (iii) together with the beneficial owner(s), if any, on whose behalf the nomination or business proposal is made, have acted in accordance with the representations set forth in the Solicitation Statement (as defined below) required by this By-law. To be timely, a stockholder's written notice shall be received by the Secretary at the principal executive offices of the Corporation not later than the close of business on the ninetieth (90th) day nor earlier than the close of business on the one hundred twentieth (120th) day prior to the one-year anniversary of the preceding year's Annual Meeting; provided, however, that in the event the Annual Meeting is first convened more than thirty (30) days before or more than sixty (60) days after such anniversary date, or if no Annual Meeting were held in the preceding year, notice by the stockholder to be timely must be received by the Secretary of the Corporation not later than the close of business on the later of the ninetieth (90th) day prior to the scheduled date of such Annual Meeting or the tenth (10th) day following the day on which public announcement of the date of such meeting is first made (such notice within such time periods shall be referred to as "Timely Notice"). Notwithstanding anything to the contrary provided herein, for the first Annual Meeting of the Corporation, a stockholder's notice shall be timely if received by the Secretary at the principal executive offices of the Corporation not later than the close of business on the later of the ninetieth (90th) day prior to the scheduled date of such Annual Meeting or the tenth (10th) day following the day on which public announcement of the date of such Annual Meeting is first made or sent by the Corporation. Such stockholder's Timely Notice shall set forth:

(A) as to each person whom the stockholder proposes to nominate for election or reelection as a director, all information relating to such person that is required to be disclosed in solicitations of proxies for election of directors in an election contest, or is otherwise required, in each case pursuant to Regulation 14A under the Exchange Act (including such person's written consent to being named in the proxy statement as a nominee and to serving as a director if elected);

(B) as to any other business that the stockholder proposes to bring before the meeting, a brief description of the business desired to be brought before the meeting, the reasons for conducting such business at the meeting, and any material interest in such business of each Proposing Person (as defined below);

(C) (i) the name and address of the stockholder giving the notice, as they appear on the Corporation's books, and the names and addresses of the other Proposing Persons (if any) and (ii) as to each Proposing Person, the following

information: (a) the class or series and number of all shares of capital stock of the Corporation which are, directly or indirectly, owned beneficially or of record by such Proposing Person or any of its affiliates or associates (as such terms are defined in Rule 12b-2 promulgated under the Exchange Act), including any shares of any class or series of capital stock of the Corporation as to which such Proposing Person or any of its affiliates or associates has a right to acquire beneficial ownership at any time in the future, (b) all Synthetic Equity Interests (as defined below) in which such Proposing Person or any of its affiliates or associates, directly or indirectly, holds an interest including a description of the material terms of each such Synthetic Equity Interest, including without limitation, identification of the counterparty to each such Synthetic Equity Interest and disclosure, for each such Synthetic Equity Interest, as to (x) whether or not such Synthetic Equity Interest conveys any voting rights, directly or indirectly, in such shares to such Proposing Person, (y) whether or not such Synthetic Equity Interest is required to be, or is capable of being, settled through delivery of such shares and (z) whether or not such Proposing Person and/or, to the extent known, the counterparty to such Synthetic Equity Interest has entered into other transactions that hedge or mitigate the economic effect of such Synthetic Equity Interest, (c) any proxy (other than a revocable proxy given in response to a public proxy solicitation made pursuant to, and in accordance with, the Exchange Act), agreement, arrangement, understanding or relationship pursuant to which such Proposing Person has or shares a right to, directly or indirectly, vote any shares of any class or series of capital stock of the Corporation, (d) any rights to dividends or other distributions on the shares of any class or series of capital stock of the Corporation, directly or indirectly, owned beneficially by such Proposing Person that are separated or separable from the underlying shares of the Corporation, and (e) any performance-related fees (other than an asset based fee) that such Proposing Person, directly or indirectly, is entitled to based on any increase or decrease in the value of shares of any class or series of capital stock of the Corporation or any Synthetic Equity Interests (the disclosures to be made pursuant to the foregoing clauses (a) through (e) are referred to, collectively, as “Material Ownership Interests”) and (iii) a description of the material terms of all agreements, arrangements or understandings (whether or not in writing) entered into by any Proposing Person or any of its affiliates or associates with any other person for the purpose of acquiring, holding, disposing or voting of any shares of any class or series of capital stock of the Corporation;

(D) (i) a description of all agreements, arrangements or understandings by and among any of the Proposing Persons, or by and among any Proposing Persons and any other person (including with any proposed nominee(s)), pertaining to the nomination(s) or other business proposed to be brought before the meeting of stockholders (which description shall identify the name of each other person who is party to such an agreement, arrangement or understanding), and (ii) identification of the names and addresses of other stockholders (including beneficial owners) known by any of the Proposing Persons to support such

nominations or other business proposal(s), and to the extent known the class and number of all shares of the Corporation's capital stock owned beneficially or of record by such other stockholder(s) or other beneficial owner(s); and

(E) a statement whether or not the stockholder giving the notice and/or the other Proposing Person(s), if any, will deliver a proxy statement and form of proxy to holders of, in the case of a business proposal, at least the percentage of voting power of all of the shares of capital stock of the Corporation required under applicable law to approve the proposal or, in the case of a nomination or nominations, at least the percentage of voting power of all of the shares of capital stock of the Corporation reasonably believed by such Proposing Person to be sufficient to elect the nominee or nominees proposed to be nominated by such stockholder (such statement, the "Solicitation Statement").

For purposes of this Article I of these By-laws, the term "Proposing Person" shall mean the following persons: (i) the stockholder of record providing the notice of nominations or business proposed to be brought before a stockholders' meeting, and (ii) the beneficial owner(s), if different, on whose behalf the nominations or business proposed to be brought before a stockholders' meeting is made. For purposes of this Section 2 of Article I of these By-laws, the term "Synthetic Equity Interest" shall mean any transaction, agreement or arrangement (or series of transactions, agreements or arrangements), including, without limitation, any derivative, swap, hedge, repurchase or so-called "stock borrowing" agreement or arrangement, the purpose or effect of which is to, directly or indirectly: (a) give a person or entity economic benefit and/or risk similar to ownership of shares of any class or series of capital stock of the Corporation, in whole or in part, including due to the fact that such transaction, agreement or arrangement provides, directly or indirectly, the opportunity to profit or avoid a loss from any increase or decrease in the value of any shares of any class or series of capital stock of the Corporation, (b) mitigate loss to, reduce the economic risk of or manage the risk of share price changes for, any person or entity with respect to any shares of any class or series of capital stock of the Corporation, (c) otherwise provide in any manner the opportunity to profit or avoid a loss from any decrease in the value of any shares of any class or series of capital stock of the Corporation, or (d) increase or decrease the voting power of any person or entity with respect to any shares of any class or series of capital stock of the Corporation.

(3) A stockholder providing Timely Notice of nominations or business proposed to be brought before an Annual Meeting shall further update and supplement such notice, if necessary, so that the information (including, without limitation, the Material Ownership Interests information) provided or required to be provided in such notice pursuant to this By-law shall be true and correct as of the record date for the meeting and as of the date that is ten (10) business days prior to such Annual Meeting, and such update and supplement shall be received by the Secretary at the principal executive offices of the Corporation not later than the close of business on the fifth (5th) business day after the record date for the Annual Meeting (in the case of the update and

supplement required to be made as of the record date), and not later than the close of business on the eighth (8th) business day prior to the date of the Annual Meeting (in the case of the update and supplement required to be made as of ten (10) business days prior to the meeting).

(4) Notwithstanding anything in the second sentence of Article I, Section 2(a)(2) of this By-law to the contrary, in the event that the number of directors to be elected to the Board of Directors of the Corporation is increased and there is no public announcement naming all of the nominees for director or specifying the size of the increased Board of Directors made by the Corporation at least ten (10) days before the last day a stockholder may deliver a notice of nomination in accordance with the second sentence of Article I, Section 2(a)(2), a stockholder's notice required by this By-law shall also be considered timely, but only with respect to nominees for any new positions created by such increase, if it shall be received by the Secretary of the Corporation not later than the close of business on the tenth (10th) day following the day on which such public announcement is first made by the Corporation.

(b) General.

(1) Only such persons who are nominated in accordance with the provisions of this By-law shall be eligible for election and to serve as directors and only such business shall be conducted at an Annual Meeting as shall have been brought before the meeting in accordance with the provisions of this By-law or in accordance with Rule 14a-8 under the Exchange Act. The Board of Directors or a designated committee thereof shall have the power to determine whether a nomination or any business proposed to be brought before the meeting was made in accordance with the provisions of this By-law. If neither the Board of Directors nor such designated committee makes a determination as to whether any stockholder proposal or nomination was made in accordance with the provisions of this By-law, the presiding officer of the Annual Meeting shall have the power and duty to determine whether the stockholder proposal or nomination was made in accordance with the provisions of this By-law. If the Board of Directors or a designated committee thereof or the presiding officer, as applicable, determines that any stockholder proposal or nomination was not made in accordance with the provisions of this By-law, such proposal or nomination shall be disregarded and shall not be presented for action at the Annual Meeting.

(2) Except as otherwise required by law, nothing in this Article I, Section 2 shall obligate the Corporation or the Board of Directors to include in any proxy statement or other stockholder communication distributed on behalf of the Corporation or the Board of Directors information with respect to any nominee for director or any other matter of business submitted by a stockholder.

(3) Notwithstanding the foregoing provisions of this Article I, Section 2, if the nominating or proposing stockholder (or a qualified representative of the stockholder) does not appear at the Annual Meeting to present a nomination or any business, such nomination or business shall be disregarded, notwithstanding that proxies in respect of

such vote may have been received by the Corporation. For purposes of this Article I, Section 2, to be considered a qualified representative of the proposing stockholder, a person must be authorized by a written instrument executed by such stockholder or an electronic transmission delivered by such stockholder to act for such stockholder as proxy at the meeting of stockholders and such person must produce such written instrument or electronic transmission, or a reliable reproduction of the written instrument or electronic transmission, to the presiding officer at the meeting of stockholders.

(4) For purposes of this By-law, "public announcement" shall mean disclosure in a press release reported by the Dow Jones News Service, Associated Press or comparable national news service or in a document publicly filed by the Corporation with the Securities and Exchange Commission pursuant to Section 13, 14 or 15(d) of the Exchange Act.

(5) Notwithstanding the foregoing provisions of this By-law, a stockholder shall also comply with all applicable requirements of the Exchange Act and the rules and regulations thereunder with respect to the matters set forth in this By-law. Nothing in this By-law shall be deemed to affect any rights of (i) stockholders to have proposals included in the Corporation's proxy statement pursuant to Rule 14a-8 (or any successor rule), as applicable, under the Exchange Act and, to the extent required by such rule, have such proposals considered and voted on at an Annual Meeting or (ii) the holders of any series of Undesignated Preferred Stock to elect directors under specified circumstances.

SECTION 3. Special Meetings. Except as otherwise required by statute and subject to the rights, if any, of the holders of any series of Undesignated Preferred Stock, special meetings of the stockholders of the Corporation may be called only by the Board of Directors acting pursuant to a resolution approved by the affirmative vote of a majority of the Directors then in office. The Board of Directors may postpone or reschedule any previously scheduled special meeting of stockholders. Only those matters set forth in the notice of the special meeting may be considered or acted upon at a special meeting of stockholders of the Corporation. Nominations of persons for election to the Board of Directors of the Corporation and stockholder proposals of other business shall not be brought before a special meeting of stockholders to be considered by the stockholders unless such special meeting is held in lieu of an annual meeting of stockholders in accordance with Article I, Section 1 of these By-laws, in which case such special meeting in lieu thereof shall be deemed an Annual Meeting for purposes of these By-laws and the provisions of Article I, Section 2 of these By-laws shall govern such special meeting.

SECTION 4. Notice of Meetings; Adjournments.

(a) A notice of each Annual Meeting stating the hour, date and place, if any, of such Annual Meeting and the means of remote communication, if any, by which stockholders and proxyholders may be deemed to be present in person and vote at such meeting, shall be given not less than ten (10) days nor more than sixty (60) days before the Annual Meeting, to each stockholder entitled to vote thereat by delivering such notice to such stockholder or by mailing it, postage prepaid, addressed to such stockholder at the address of such stockholder as it appears on the Corporation's stock transfer books. Without limiting the manner by which notice may

otherwise be given to stockholders, any notice to stockholders may be given by electronic transmission in the manner provided in Section 232 of the Delaware General Corporation Law ("DGCL").

(b) Notice of all special meetings of stockholders shall be given in the same manner as provided for Annual Meetings, except that the notice of all special meetings shall state the purpose or purposes for which the meeting has been called.

(c) Notice of an Annual Meeting or special meeting of stockholders need not be given to a stockholder if a waiver of notice is executed, or waiver of notice by electronic transmission is provided, before or after such meeting by such stockholder or if such stockholder attends such meeting, unless such attendance is for the express purpose of objecting at the beginning of the meeting to the transaction of any business because the meeting was not lawfully called or convened.

(d) The Board of Directors may postpone and reschedule any previously scheduled Annual Meeting or special meeting of stockholders and any record date with respect thereto, regardless of whether any notice or public disclosure with respect to any such meeting has been sent or made pursuant to Section 2 of this Article I of these By-laws or otherwise. In no event shall the public announcement of an adjournment, postponement or rescheduling of any previously scheduled meeting of stockholders commence a new time period for the giving of a stockholder's notice under this Article I of these By-laws.

(e) When any meeting is convened, the presiding officer may adjourn the meeting if (i) no quorum is present for the transaction of business, (ii) the Board of Directors determines that adjournment is necessary or appropriate to enable the stockholders to consider fully information which the Board of Directors determines has not been made sufficiently or timely available to stockholders, or (iii) the Board of Directors determines that adjournment is otherwise in the best interests of the Corporation. When any Annual Meeting or special meeting of stockholders is adjourned to another hour, date or place, notice need not be given of the adjourned meeting other than an announcement at the meeting at which the adjournment is taken of the hour, date and place, if any, to which the meeting is adjourned and the means of remote communications, if any, by which stockholders and proxyholders may be deemed to be present in person and vote at such adjourned meeting; provided, however, that if the adjournment is for more than thirty (30) days from the meeting date, or if after the adjournment a new record date is fixed for the adjourned meeting, notice of the adjourned meeting and the means of remote communications, if any, by which stockholders and proxyholders may be deemed to be present in person and vote at such adjourned meeting shall be given to each stockholder of record entitled to vote thereat and each stockholder who, by law or under the Certificate of Incorporation of the Corporation (as the same may hereafter be amended and/or restated, the "Certificate") or these By-laws, is entitled to such notice.

SECTION 5. Quorum. A majority of the shares entitled to vote, present in person or represented by proxy, shall constitute a quorum at any meeting of stockholders. If less than a quorum is present at a meeting, the holders of voting stock representing a majority of the voting power present at the meeting or the presiding officer may adjourn the meeting from time to time,

and the meeting may be held as adjourned without further notice, except as provided in Section 4 of this Article I. At such adjourned meeting at which a quorum is present, any business may be transacted which might have been transacted at the meeting as originally noticed. The stockholders present at a duly constituted meeting may continue to transact business until adjournment, notwithstanding the withdrawal of enough stockholders to leave less than a quorum.

SECTION 6. Voting and Proxies. Stockholders shall have one vote for each share of stock entitled to vote owned by them of record according to the stock ledger of the Corporation as of the record date, unless otherwise provided by law or by the Certificate. Stockholders may vote either (i) in person, (ii) by written proxy or (iii) by a transmission permitted by Section 212(c) of the DGCL. Any copy, facsimile telecommunication or other reliable reproduction of the writing or transmission permitted by Section 212(c) of the DGCL may be substituted for or used in lieu of the original writing or transmission for any and all purposes for which the original writing or transmission could be used, provided that such copy, facsimile telecommunication or other reproduction shall be a complete reproduction of the entire original writing or transmission. Proxies shall be filed in accordance with the procedures established for the meeting of stockholders. Except as otherwise limited therein or as otherwise provided by law, proxies authorizing a person to vote at a specific meeting shall entitle the persons authorized thereby to vote at any adjournment of such meeting, but they shall not be valid after final adjournment of such meeting. A proxy with respect to stock held in the name of two or more persons shall be valid if executed by or on behalf of any one of them unless at or prior to the exercise of the proxy the Corporation receives a specific written notice to the contrary from any one of them.

SECTION 7. Action at Meeting[1]. When a quorum is present at any meeting of stockholders, any matter before any such meeting (other than an election of a director or directors) shall be decided by a majority of the votes properly cast for and against such matter, except where a larger vote is required by law, by the Certificate or by these By-laws. Any election of directors by stockholders shall be determined by a plurality of the votes properly cast on the election of directors.

SECTION 8. Stockholder Lists. The Secretary or an Assistant Secretary (or the Corporation’s transfer agent or other person authorized by these By-laws or by law) shall prepare and make, at least ten (10) days before every Annual Meeting or special meeting of stockholders, a complete list of the stockholders entitled to vote at the meeting, arranged in alphabetical order, and showing the address of each stockholder and the number of shares registered in the name of each stockholder. Such list shall be open to the examination of any stockholder, for a period of at least ten (10) days prior to the meeting in the manner provided by law. The list shall also be open to the examination of any stockholder during the whole time of the meeting as provided by law.

SECTION 9. Presiding Officer. The Board of Directors shall designate a representative to preside over all Annual Meetings or special meetings of stockholders, provide that if the

[1] Note to Helen: BLUE's bylaws provide that a plurality will only be required for director elections if the election is contested (i.e., more nominees than there are open seats). Which approach would you like to take here?

Board of Directors does not so designate such a presiding officer, then the Chairman of the Board, if one is elected, shall preside over such meetings. If the Board of Directors does not so designate such a presiding officer and there is no Chairman of the Board or the Chairman of the Board is unable to so preside or is absent, then the Chief Executive Officer, if one is elected, shall preside over such meetings, provided further that if there is no Chief Executive Officer or the Chief Executive Officer is unable to so preside or is absent, then the President shall preside over such meetings. The presiding officer at any Annual Meeting or special meeting of stockholders shall have the power, among other things, to adjourn such meeting at any time and from time to time, subject to Sections 4 and 5 of this Article I. The order of business and all other matters of procedure at any meeting of the stockholders shall be determined by the presiding officer.

SECTION 10. Inspectors of Elections. The Corporation shall, in advance of any meeting of stockholders, appoint one or more inspectors to act at the meeting and make a written report thereof. The Corporation may designate one or more persons as alternate inspectors to replace any inspector who fails to act. If no inspector or alternate is able to act at a meeting of stockholders, the presiding officer shall appoint one or more inspectors to act at the meeting. Any inspector may, but need not, be an officer, employee or agent of the Corporation. Each inspector, before entering upon the discharge of his or her duties, shall take and sign an oath faithfully to execute the duties of inspector with strict impartiality and according to the best of his or her ability. The inspectors shall perform such duties as are required by the DGCL, including the counting of all votes and ballots. The inspectors may appoint or retain other persons or entities to assist the inspectors in the performance of the duties of the inspectors. The presiding officer may review all determinations made by the inspectors, and in so doing the presiding officer shall be entitled to exercise his or her sole judgment and discretion and he or she shall not be bound by any determinations made by the inspectors. All determinations by the inspectors and, if applicable, the presiding officer, shall be subject to further review by any court of competent jurisdiction.

ARTICLE II

Directors

SECTION 1. Powers. The business and affairs of the Corporation shall be managed by or under the direction of the Board of Directors except as otherwise provided by the Certificate or required by law.

SECTION 2. Number and Terms. The number of directors of the Corporation shall be fixed solely and exclusively by resolution duly adopted from time to time by the Board of Directors. The directors shall hold office in the manner provided in the Certificate.

SECTION 3. Qualification. No director need be a stockholder of the Corporation.

SECTION 4. Vacancies. Vacancies in the Board of Directors shall be filled in the manner provided in the Certificate.

SECTION 5. Removal. Directors may be removed from office only in the manner provided in the Certificate.

SECTION 6. Resignation. A director may resign at any time by giving written notice to the Chairman of the Board, if one is elected, the President or the Secretary. A resignation shall be effective upon receipt, unless the resignation otherwise provides.

SECTION 7. Regular Meetings. Regular meetings (including any annual meeting) of the Board of Directors may be held at such hour, date and place as the Board of Directors may by resolution from time to time determine and publicize by means of reasonable notice given to any director who is not present at the meeting at which such resolution is adopted.

SECTION 8. Special Meetings. Special meetings of the Board of Directors may be called, orally or in writing, by or at the request of a majority of the directors, the Chairman of the Board, if one is elected, or the President. The person calling any such special meeting of the Board of Directors may fix the hour, date and place thereof.

SECTION 9. Notice of Meetings. Notice of the hour, date and place of all special meetings of the Board of Directors shall be given to each director by the Secretary or an Assistant Secretary, or in case of the death, absence, incapacity or refusal of such persons, by the Chairman of the Board, if one is elected, or the President or such other officer designated by the Chairman of the Board, if one is elected, or the President. Notice of any special meeting of the Board of Directors shall be given to each director in person, by telephone, or by facsimile, electronic mail or other form of electronic communication, sent to his or her business or home address, at least twenty-four (24) hours in advance of the meeting, or by written notice mailed to his or her business or home address, at least forty-eight (48) hours in advance of the meeting. Such notice shall be deemed to be delivered when hand-delivered to such address, read to such director by telephone, deposited in the mail so addressed, with postage thereon prepaid if mailed, dispatched or transmitted if sent by facsimile transmission or by electronic mail or other form of electronic communications. A written waiver of notice signed before or after a meeting by a director and filed with the records of the meeting shall be deemed to be equivalent to notice of the meeting. The attendance of a director at a meeting shall constitute a waiver of notice of such meeting, except where a director attends a meeting for the express purpose of objecting at the beginning of the meeting to the transaction of any business because such meeting is not lawfully called or convened. Except as otherwise required by law, by the Certificate or by these By-laws, neither the business to be transacted at, nor the purpose of, any meeting of the Board of Directors need be specified in the notice or waiver of notice of such meeting.

SECTION 10. Quorum. At any meeting of the Board of Directors, a majority of the total number of directors shall constitute a quorum for the transaction of business, but if less than a quorum is present at a meeting, a majority of the directors present may adjourn the meeting from time to time, and the meeting may be held as adjourned without further notice. Any business which might have been transacted at the meeting as originally noticed may be transacted at such adjourned meeting at which a quorum is present. For purposes of this section, the total number of directors includes any unfilled vacancies on the Board of Directors.

SECTION 11. Action at Meeting. At any meeting of the Board of Directors at which a quorum is present, the vote of a majority of the directors present shall constitute action by the Board of Directors, unless otherwise required by law, by the Certificate or by these By-laws.

SECTION 12. Action by Consent. Any action required or permitted to be taken at any meeting of the Board of Directors may be taken without a meeting if all members of the Board of Directors consent thereto in writing or by electronic transmission and the writing or writings or electronic transmission or transmissions are filed with the records of the meetings of the Board of Directors. Such filing shall be in paper form if the minutes are maintained in paper form and shall be in electronic form if the minutes are maintained in electronic form. Such consent shall be treated as a resolution of the Board of Directors for all purposes.

SECTION 13. Manner of Participation. Directors may participate in meetings of the Board of Directors by means of conference telephone or other communications equipment by means of which all directors participating in the meeting can hear each other, and participation in a meeting in accordance herewith shall constitute presence in person at such meeting for purposes of these By-laws.

SECTION 14. Presiding Director. The Board of Directors shall designate a representative to preside over all meetings of the Board of Directors, provided that if the Board of Directors does not so designate such a presiding director or such designated presiding director is unable to so preside or is absent, then the Chairman of the Board, if one is elected, shall preside over all meetings of the Board of Directors. If both the designated presiding director, if one is so designated, and the Chairman of the Board, if one is elected, are unable to preside or are absent, the Board of Directors shall designate an alternate representative to preside over a meeting of the Board of Directors.

SECTION 15. Committees. The Board of Directors, by vote of a majority of the directors then in office, may elect one or more committees, including, without limitation, a Compensation Committee, a Nominating & Corporate Governance Committee and an Audit Committee, and may delegate thereto some or all of its powers except those which by law, by the Certificate or by these By-laws may not be delegated. Except as the Board of Directors may otherwise determine, any such committee may make rules for the conduct of its business, but unless otherwise provided by the Board of Directors or in such rules, its business shall be conducted so far as possible in the same manner as is provided by these By-laws for the Board of Directors. All members of such committees shall hold such offices at the pleasure of the Board of Directors. The Board of Directors may abolish any such committee at any time. Any committee to which the Board of Directors delegates any of its powers or duties shall keep records of its meetings and shall report its action to the Board of Directors.

SECTION 16. Compensation of Directors. Directors shall receive such compensation for their services as shall be determined by a majority of the Board of Directors, or a designated committee thereof, provided that directors who are serving the Corporation as employees and who receive compensation for their services as such, shall not receive any salary or other compensation for their services as directors of the Corporation.

ARTICLE III

Officers

SECTION 1. Enumeration. The officers of the Corporation shall consist of a President, a Treasurer, a Secretary and such other officers, including, without limitation, a Chairman of the Board of Directors, a Chief Executive Officer and one or more Vice Presidents (including Executive Vice Presidents or Senior Vice Presidents), Assistant Vice Presidents, Assistant Treasurers and Assistant Secretaries, as the Board of Directors may determine.

SECTION 2. Election. At the regular annual meeting of the Board of Directors following the Annual Meeting, the Board of Directors shall elect the President, the Treasurer and the Secretary. Other officers may be elected by the Board of Directors at such regular annual meeting of the Board of Directors or at any other regular or special meeting.

SECTION 3. Qualification. No officer need be a stockholder or a director. Any person may occupy more than one office of the Corporation at any time.

SECTION 4. Tenure. Except as otherwise provided by the Certificate or by these By-laws, each of the officers of the Corporation shall hold office until the regular annual meeting of the Board of Directors following the next Annual Meeting and until his or her successor is elected and qualified or until his or her earlier resignation or removal.

SECTION 5. Resignation. Any officer may resign by delivering his or her written resignation to the Corporation addressed to the President or the Secretary, and such resignation shall be effective upon receipt, unless the resignation otherwise provides.

SECTION 6. Removal. Except as otherwise provided by law, the Board of Directors may remove any officer with or without cause by the affirmative vote of a majority of the directors then in office.

SECTION 7. Absence or Disability. In the event of the absence or disability of any officer, the Board of Directors may designate another officer to act temporarily in place of such absent or disabled officer.

SECTION 8. Vacancies. Any vacancy in any office may be filled for the unexpired portion of the term by the Board of Directors.

SECTION 9. President. The President shall, subject to the direction of the Board of Directors, have such powers and shall perform such duties as the Board of Directors may from time to time designate.

SECTION 10. Chairman of the Board. The Chairman of the Board, if one is elected, shall have such powers and shall perform such duties as the Board of Directors may from time to time designate.

SECTION 11. Chief Executive Officer. The Chief Executive Officer, if one is elected, shall have such powers and shall perform such duties as the Board of Directors may from time to time designate.

SECTION 12. Vice Presidents and Assistant Vice Presidents. Any Vice President (including any Executive Vice President or Senior Vice President) and any Assistant Vice President shall have such powers and shall perform such duties as the Board of Directors or the Chief Executive Officer may from time to time designate.

SECTION 13. Treasurer and Assistant Treasurers. The Treasurer shall, subject to the direction of the Board of Directors and except as the Board of Directors or the Chief Executive Officer may otherwise provide, have general charge of the financial affairs of the Corporation and shall cause to be kept accurate books of account. The Treasurer shall have custody of all funds, securities, and valuable documents of the Corporation. He or she shall have such other duties and powers as may be designated from time to time by the Board of Directors or the Chief Executive Officer. Any Assistant Treasurer shall have such powers and perform such duties as the Board of Directors or the Chief Executive Officer may from time to time designate.

SECTION 14. Secretary and Assistant Secretaries. The Secretary shall record all the proceedings of the meetings of the stockholders and the Board of Directors (including committees of the Board of Directors) in books kept for that purpose. In his or her absence from any such meeting, a temporary secretary chosen at the meeting shall record the proceedings thereof. The Secretary shall have charge of the stock ledger (which may, however, be kept by any transfer or other agent of the Corporation). The Secretary shall have custody of the seal of the Corporation, and the Secretary, or an Assistant Secretary shall have authority to affix it to any instrument requiring it, and, when so affixed, the seal may be attested by his or her signature or that of an Assistant Secretary. The Secretary shall have such other duties and powers as may be designated from time to time by the Board of Directors or the Chief Executive Officer. In the absence of the Secretary, any Assistant Secretary may perform his or her duties and responsibilities. Any Assistant Secretary shall have such powers and perform such duties as the Board of Directors or the Chief Executive Officer may from time to time designate.

SECTION 15. Other Powers and Duties. Subject to these By-laws and to such limitations as the Board of Directors may from time to time prescribe, the officers of the Corporation shall each have such powers and duties as generally pertain to their respective offices, as well as such powers and duties as from time to time may be conferred by the Board of Directors or the Chief Executive Officer.

ARTICLE IV

Capital Stock

SECTION 1. Certificates of Stock. Each stockholder shall be entitled to a certificate of the capital stock of the Corporation in such form as may from time to time be prescribed by the Board of Directors. Such certificate shall be signed by the Chairman of the Board, the President

or a Vice President and by the Treasurer or an Assistant Treasurer, or the Secretary or an Assistant Secretary. The Corporation seal and the signatures by the Corporation's officers, the transfer agent or the registrar may be facsimiles. In case any officer, transfer agent or registrar who has signed or whose facsimile signature has been placed on such certificate shall have ceased to be such officer, transfer agent or registrar before such certificate is issued, it may be issued by the Corporation with the same effect as if he or she were such officer, transfer agent or registrar at the time of its issue. Every certificate for shares of stock which are subject to any restriction on transfer and every certificate issued when the Corporation is authorized to issue more than one class or series of stock shall contain such legend with respect thereto as is required by law. Notwithstanding anything to the contrary provided in these Bylaws, the Board of Directors of the Corporation may provide by resolution or resolutions that some or all of any or all classes or series of its stock shall be uncertificated shares (except that the foregoing shall not apply to shares represented by a certificate until such certificate is surrendered to the Corporation), and by the approval and adoption of these Bylaws the Board of Directors has determined that all classes or series of the Corporation's stock may be uncertificated, whether upon original issuance, re-issuance, or subsequent transfer.

SECTION 2. Transfers. Subject to any restrictions on transfer and unless otherwise provided by the Board of Directors, shares of stock that are represented by a certificate may be transferred on the books of the Corporation by the surrender to the Corporation or its transfer agent of the certificate theretofore properly endorsed or accompanied by a written assignment or power of attorney properly executed, with transfer stamps (if necessary) affixed, and with such proof of the authenticity of signature as the Corporation or its transfer agent may reasonably require. Shares of stock that are not represented by a certificate may be transferred on the books of the Corporation by submitting to the Corporation or its transfer agent such evidence of transfer and following such other procedures as the Corporation or its transfer agent may require.

SECTION 3. Record Holders. Except as may otherwise be required by law, by the Certificate or by these By-laws, the Corporation shall be entitled to treat the record holder of stock as shown on its books as the owner of such stock for all purposes, including the payment of dividends and the right to vote with respect thereto, regardless of any transfer, pledge or other disposition of such stock, until the shares have been transferred on the books of the Corporation in accordance with the requirements of these By-laws.

SECTION 4. Record Date. In order that the Corporation may determine the stockholders entitled to notice of or to vote at any meeting of stockholders or any adjournment thereof or entitled to receive payment of any dividend or other distribution or allotment of any rights, or entitled to exercise any rights in respect of any change, conversion or exchange of stock or for the purpose of any other lawful action, the Board of Directors may fix a record date, which record date shall not precede the date upon which the resolution fixing the record date is adopted by the Board of Directors, and which record date: (a) in the case of determination of stockholders entitled to vote at any meeting of stockholders, shall, unless otherwise required by law, not be more than sixty (60) nor less than ten (10) days before the date of such meeting and (b) in the case of any other action, shall not be more than sixty (60) days prior to such other action. If no record date is fixed: (i) the record date for determining stockholders entitled to notice of or to

vote at a meeting of stockholders shall be at the close of business on the day next preceding the day on which notice is given, or, if notice is waived, at the close of business on the day next preceding the day on which the meeting is held; and (ii) the record date for determining stockholders for any other purpose shall be at the close of business on the day on which the Board of Directors adopts the resolution relating thereto.

SECTION 5. Replacement of Certificates. In case of the alleged loss, destruction or mutilation of a certificate of stock of the Corporation, a duplicate certificate may be issued in place thereof, upon such terms as the Board of Directors may prescribe.

ARTICLE V

Indemnification

SECTION 1. Definitions. For purposes of this Article:

(a) "Corporate Status" describes the status of a person who is serving or has served (i) as a Director of the Corporation, (ii) as an Officer of the Corporation, (iii) as a Non-Officer Employee of the Corporation, or (iv) as a director, partner, trustee, officer, employee or agent of any other corporation, partnership, limited liability company, joint venture, trust, employee benefit plan, foundation, association, organization or other legal entity which such person is or was serving at the request of the Corporation. For purposes of this Section 1(a), a Director, Officer or Non-Officer Employee of the Corporation who is serving or has served as a director, partner, trustee, officer, employee or agent of a Subsidiary shall be deemed to be serving at the request of the Corporation. Notwithstanding the foregoing, "Corporate Status" shall not include the status of a person who is serving or has served as a director, officer, employee or agent of a constituent corporation absorbed in a merger or consolidation transaction with the Corporation with respect to such person's activities prior to said transaction, unless specifically authorized by the Board of Directors or the stockholders of the Corporation;

(b) "Director" means any person who serves or has served the Corporation as a director on the Board of Directors of the Corporation;

(c) "Disinterested Director" means, with respect to each Proceeding in respect of which indemnification is sought hereunder, a Director of the Corporation who is not and was not a party to such Proceeding;

(d) "Expenses" means all attorneys' fees, retainers, court costs, transcript costs, fees of expert witnesses, private investigators and professional advisors (including, without limitation, accountants and investment bankers), travel expenses, duplicating costs, printing and binding costs, costs of preparation of demonstrative evidence and other courtroom presentation aids and devices, costs incurred in connection with document review, organization, imaging and computerization, telephone charges, postage, delivery service fees, and all other disbursements, costs or expenses of the type customarily incurred in connection with prosecuting, defending,

preparing to prosecute or defend, investigating, being or preparing to be a witness in, settling or otherwise participating in, a Proceeding;

(e) "Liabilities" means judgments, damages, liabilities, losses, penalties, excise taxes, fines and amounts paid in settlement;

(f) "Non-Officer Employee" means any person who serves or has served as an employee or agent of the Corporation, but who is not or was not a Director or Officer;

(g) "Officer" means any person who serves or has served the Corporation as an officer of the Corporation appointed by the Board of Directors of the Corporation;

(h) "Proceeding" means any threatened, pending or completed action, suit, arbitration, alternate dispute resolution mechanism, inquiry, investigation, administrative hearing or other proceeding, whether civil, criminal, administrative, arbitrative or investigative; and

(i) "Subsidiary" shall mean any corporation, partnership, limited liability company, joint venture, trust or other entity of which the Corporation owns (either directly or through or together with another Subsidiary of the Corporation) either (i) a general partner, managing member or other similar interest or (ii) (A) fifty percent (50%) or more of the voting power of the voting capital equity interests of such corporation, partnership, limited liability company, joint venture or other entity, or (B) fifty percent (50%) or more of the outstanding voting capital stock or other voting equity interests of such corporation, partnership, limited liability company, joint venture or other entity.

SECTION 2. Indemnification of Directors and Officers.

(a) Subject to the operation of Section 4 of this Article V of these By-laws, each Director and Officer shall be indemnified and held harmless by the Corporation to the fullest extent authorized by the DGCL, as the same exists or may hereafter be amended (but, in the case of any such amendment, only to the extent that such amendment permits the Corporation to provide broader indemnification rights than such law permitted the Corporation to provide prior to such amendment), and to the extent authorized in this Section 2.

(1) Actions, Suits and Proceedings Other than By or In the Right of the Corporation. Each Director and Officer shall be indemnified and held harmless by the Corporation against any and all Expenses and Liabilities that are incurred or paid by such Director or Officer or on such Director's or Officer's behalf in connection with any Proceeding or any claim, issue or matter therein (other than an action by or in the right of the Corporation), which such Director or Officer is, or is threatened to be made, a party to or participant in by reason of such Director's or Officer's Corporate Status, if such Director or Officer acted in good faith and in a manner such Director or Officer reasonably believed to be in or not opposed to the best interests of the Corporation and, with respect to any criminal proceeding, had no reasonable cause to believe his or her conduct was unlawful.

(2) Actions, Suits and Proceedings By or In the Right of the Corporation. Each Director and Officer shall be indemnified and held harmless by the Corporation against any and all Expenses that are incurred by such Director or Officer or on such Director's or Officer's behalf in connection with any Proceeding or any claim, issue or matter therein by or in the right of the Corporation, which such Director or Officer is, or is threatened to be made, a party to or participant in by reason of such Director's or Officer's Corporate Status, if such Director or Officer acted in good faith and in a manner such Director or Officer reasonably believed to be in or not opposed to the best interests of the Corporation; provided, however, that no indemnification shall be made under this Section 2(a)(2) in respect of any claim, issue or matter as to which such Director or Officer shall have been finally adjudged by a court of competent jurisdiction to be liable to the Corporation, unless, and only to the extent that, the Court of Chancery or another court in which such Proceeding was brought shall determine upon application that, despite adjudication of liability, but in view of all the circumstances of the case, such Director or Officer is fairly and reasonably entitled to indemnification for such Expenses that such court deems proper.

(3) Survival of Rights. The rights of indemnification provided by this Section 2 shall continue as to a Director or Officer after he or she has ceased to be a Director or Officer and shall inure to the benefit of his or her heirs, executors, administrators and personal representatives.

(4) Actions by Directors or Officers. Notwithstanding the foregoing, the Corporation shall indemnify any Director or Officer seeking indemnification in connection with a Proceeding initiated by such Director or Officer only if such Proceeding (including any parts of such Proceeding not initiated by such Director or Officer) was authorized in advance by the Board of Directors of the Corporation, unless such Proceeding was brought to enforce such Officer's or Director's rights to indemnification or, in the case of Directors, advancement of Expenses under these By-laws in accordance with the provisions set forth herein.

SECTION 3. Indemnification of Non-Officer Employees. Subject to the operation of Section 4 of this Article V of these By-laws, each Non-Officer Employee may, in the discretion of the Board of Directors of the Corporation, be indemnified by the Corporation to the fullest extent authorized by the DGCL, as the same exists or may hereafter be amended, against any or all Expenses and Liabilities that are incurred by such Non-Officer Employee or on such Non-Officer Employee's behalf in connection with any threatened, pending or completed Proceeding, or any claim, issue or matter therein, which such Non-Officer Employee is, or is threatened to be made, a party to or participant in by reason of such Non-Officer Employee's Corporate Status, if such Non-Officer Employee acted in good faith and in a manner such Non-Officer Employee reasonably believed to be in or not opposed to the best interests of the Corporation and, with respect to any criminal proceeding, had no reasonable cause to believe his or her conduct was unlawful. The rights of indemnification provided by this Section 3 shall exist as to a Non-Officer Employee after he or she has ceased to be a Non-Officer Employee and shall inure to the benefit of his or her heirs, personal representatives, executors and administrators. Notwithstanding the

foregoing, the Corporation may indemnify any Non-Officer Employee seeking indemnification in connection with a Proceeding initiated by such Non-Officer Employee only if such Proceeding was authorized in advance by the Board of Directors of the Corporation.

SECTION 4. Determination. Unless ordered by a court, no indemnification shall be provided pursuant to this Article V to a Director, to an Officer or to a Non-Officer Employee unless a determination shall have been made that such person acted in good faith and in a manner such person reasonably believed to be in or not opposed to the best interests of the Corporation and, with respect to any criminal Proceeding, such person had no reasonable cause to believe his or her conduct was unlawful. Such determination shall be made by (a) a majority vote of the Disinterested Directors, even though less than a quorum of the Board of Directors, (b) a committee comprised of Disinterested Directors, such committee having been designated by a majority vote of the Disinterested Directors (even though less than a quorum), (c) if there are no such Disinterested Directors, or if a majority of Disinterested Directors so directs, by independent legal counsel in a written opinion, or (d) by the stockholders of the Corporation.

SECTION 5. Advancement of Expenses to Directors Prior to Final Disposition.

(a) The Corporation shall advance all Expenses incurred by or on behalf of any Director in connection with any Proceeding in which such Director is involved by reason of such Director's Corporate Status within thirty (30) days after the receipt by the Corporation of a written statement from such Director requesting such advance or advances from time to time, whether prior to or after final disposition of such Proceeding. Such statement or statements shall reasonably evidence the Expenses incurred by such Director and shall be preceded or accompanied by an undertaking by or on behalf of such Director to repay any Expenses so advanced if it shall ultimately be determined that such Director is not entitled to be indemnified against such Expenses. Notwithstanding the foregoing, the Corporation shall advance all Expenses incurred by or on behalf of any Director seeking advancement of expenses hereunder in connection with a Proceeding initiated by such Director only if such Proceeding (including any parts of such Proceeding not initiated by such Director) was (i) authorized by the Board of Directors of the Corporation, or (ii) brought to enforce such Director's rights to indemnification or advancement of Expenses under these By-laws.

(b) If a claim for advancement of Expenses hereunder by a Director is not paid in full by the Corporation within thirty (30) days after receipt by the Corporation of documentation of Expenses and the required undertaking, such Director may at any time thereafter bring suit against the Corporation to recover the unpaid amount of the claim and if successful in whole or in part, such Director shall also be entitled to be paid the expenses of prosecuting such claim. The failure of the Corporation (including its Board of Directors or any committee thereof, independent legal counsel, or stockholders) to make a determination concerning the permissibility of such advancement of Expenses under this Article V shall not be a defense to an action brought by a Director for recovery of the unpaid amount of an advancement claim and shall not create a presumption that such advancement is not permissible. The burden of proving that a Director is not entitled to an advancement of expenses shall be on the Corporation.

(c) In any suit brought by the Corporation to recover an advancement of expenses pursuant to the terms of an undertaking, the Corporation shall be entitled to recover such expenses upon a final adjudication that the Director has not met any applicable standard for indemnification set forth in the DGCL.

SECTION 6. Advancement of Expenses to Officers and Non-Officer Employees Prior to Final Disposition.

(a) The Corporation may, at the discretion of the Board of Directors of the Corporation, advance any or all Expenses incurred by or on behalf of any Officer or any Non-Officer Employee in connection with any Proceeding in which such person is involved by reason of his or her Corporate Status as an Officer or Non-Officer Employee upon the receipt by the Corporation of a statement or statements from such Officer or Non-Officer Employee requesting such advance or advances from time to time, whether prior to or after final disposition of such Proceeding. Such statement or statements shall reasonably evidence the Expenses incurred by such Officer or Non-Officer Employee and shall be preceded or accompanied by an undertaking by or on behalf of such person to repay any Expenses so advanced if it shall ultimately be determined that such Officer or Non-Officer Employee is not entitled to be indemnified against such Expenses.

(b) In any suit brought by the Corporation to recover an advancement of expenses pursuant to the terms of an undertaking, the Corporation shall be entitled to recover such expenses upon a final adjudication that the Officer or Non-Officer Employee has not met any applicable standard for indemnification set forth in the DGCL.

SECTION 7. Contractual Nature of Rights.

(a) The provisions of this Article V shall be deemed to be a contract between the Corporation and each Director and Officer entitled to the benefits hereof at any time while this Article V is in effect, in consideration of such person's past or current and any future performance of services for the Corporation. Neither amendment, repeal or modification of any provision of this Article V nor the adoption of any provision of the Certificate of Incorporation inconsistent with this Article V shall eliminate or reduce any right conferred by this Article V in respect of any act or omission occurring, or any cause of action or claim that accrues or arises or any state of facts existing, at the time of or before such amendment, repeal, modification or adoption of an inconsistent provision (even in the case of a proceeding based on such a state of facts that is commenced after such time), and all rights to indemnification and advancement of Expenses granted herein or arising out of any act or omission shall vest at the time of the act or omission in question, regardless of when or if any proceeding with respect to such act or omission is commenced. The rights to indemnification and to advancement of expenses provided by, or granted pursuant to, this Article V shall continue notwithstanding that the person has ceased to be a director or officer of the Corporation and shall inure to the benefit of the estate, heirs, executors, administrators, legatees and distributes of such person.

(b) If a claim for indemnification hereunder by a Director or Officer is not paid in full by the Corporation within sixty (60) days after receipt by the Corporation of a written claim for

indemnification, such Director or Officer may at any time thereafter bring suit against the Corporation to recover the unpaid amount of the claim, and if successful in whole or in part, such Director or Officer shall also be entitled to be paid the expenses of prosecuting such claim. The failure of the Corporation (including its Board of Directors or any committee thereof, independent legal counsel, or stockholders) to make a determination concerning the permissibility of such indemnification under this Article V shall not be a defense to an action brought by a Director or Officer for recovery of the unpaid amount of an indemnification claim and shall not create a presumption that such indemnification is not permissible. The burden of proving that a Director or Officer is not entitled to indemnification shall be on the Corporation.

(c) In any suit brought by a Director or Officer to enforce a right to indemnification hereunder, it shall be a defense that such Director or Officer has not met any applicable standard for indemnification set forth in the DGCL.

SECTION 8. Non-Exclusivity of Rights. The rights to indemnification and to advancement of Expenses set forth in this Article V shall not be exclusive of any other right which any Director, Officer, or Non-Officer Employee may have or hereafter acquire under any statute, provision of the Certificate or these By-laws, agreement, vote of stockholders or Disinterested Directors or otherwise.

SECTION 9. Insurance. The Corporation may maintain insurance, at its expense, to protect itself and any Director, Officer or Non-Officer Employee against any liability of any character asserted against or incurred by the Corporation or any such Director, Officer or Non-Officer Employee, or arising out of any such person's Corporate Status, whether or not the Corporation would have the power to indemnify such person against such liability under the DGCL or the provisions of this Article V.

SECTION 10. Other Indemnification. The Corporation's obligation, if any, to indemnify or provide advancement of Expenses to any person under this Article V as a result of such person serving, at the request of the Corporation, as a director, partner, trustee, officer, employee or agent of another corporation, partnership, joint venture, trust, employee benefit plan or other enterprise shall be reduced by any amount such person may collect as indemnification or advancement of Expenses from such other corporation, partnership, joint venture, trust, employee benefit plan or enterprise (the "Primary Indemnitor"). Any indemnification or advancement of Expenses under this Article V owed by the Corporation as a result of a person serving, at the request of the Corporation, as a director, partner, trustee, officer, employee or agent of another corporation, partnership, joint venture, trust, employee benefit plan or other enterprise shall only be in excess of, and shall be secondary to, the indemnification or advancement of Expenses available from the applicable Primary Indemnitor(s) and any applicable insurance policies.

ARTICLE VI

Miscellaneous Provisions

SECTION 1. Fiscal Year. The fiscal year of the Corporation shall be determined by the Board of Directors.

SECTION 2. Seal. The Board of Directors shall have power to adopt and alter the seal of the Corporation.

SECTION 3. Execution of Instruments. All deeds, leases, transfers, contracts, bonds, notes and other obligations to be entered into by the Corporation in the ordinary course of its business without director action may be executed on behalf of the Corporation by the Chairman of the Board, if one is elected, the President or the Treasurer or any other officer, employee or agent of the Corporation as the Board of Directors or the executive committee of the Board may authorize.

SECTION 4. Voting of Securities. Unless the Board of Directors otherwise provides, the Chairman of the Board, if one is elected, the President or the Treasurer may waive notice of and act on behalf of the Corporation, or appoint another person or persons to act as proxy or attorney in fact for the Corporation with or without discretionary power and/or power of substitution, at any meeting of stockholders or shareholders of any other corporation or organization, any of whose securities are held by the Corporation.

SECTION 5. Resident Agent. The Board of Directors may appoint a resident agent upon whom legal process may be served in any action or proceeding against the Corporation.

SECTION 6. Corporate Records. The original or attested copies of the Certificate, By-laws and records of all meetings of the incorporators, stockholders and the Board of Directors and the stock transfer books, which shall contain the names of all stockholders, their record addresses and the amount of stock held by each, may be kept outside the State of Delaware and shall be kept at the principal office of the Corporation, at an office of its counsel, at an office of its transfer agent or at such other place or places as may be designated from time to time by the Board of Directors.

SECTION 7. Certificate. All references in these By-laws to the Certificate shall be deemed to refer to the Amended and Restated Certificate of Incorporation of the Corporation, as amended and/or restated and in effect from time to time.

SECTION 8. Exclusive Jurisdiction of Delaware Courts or the United States Federal District Courts. Unless the Corporation consents in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware shall be the sole and exclusive forum for any state law claims for (i) any derivative action or proceeding brought on behalf of the Corporation, (ii) any action asserting a claim of, or a claim based on, a breach of a fiduciary duty owed by any current or former director, officer or other employee of the Corporation to the Corporation or the Corporation’s stockholders, (iii) any action asserting a claim arising pursuant

to any provision of the Delaware General Corporation Law or the Certificate or Bylaws (including the interpretation, validity or enforceability thereof), or (iv) any action asserting a claim governed by the internal affairs doctrine. Unless the Corporation consents in writing to the selection of an alternative forum, the federal district courts of the United States of America shall be the sole and exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act of 1933, as amended. Any person or entity purchasing or otherwise acquiring any interest in shares of capital stock of the Corporation shall be deemed to have notice of and consented to the provisions of this Section 8.

SECTION 9. Amendment of By-laws.

(a) Amendment by Directors. Except as provided otherwise by law, these By-laws may be amended or repealed by the Board of Directors by the affirmative vote of a majority of the directors then in office.

(b) Amendment by Stockholders. These By-laws may be amended or repealed at any Annual Meeting, or special meeting of stockholders called for such purpose in accordance with these By-Laws, by the affirmative vote of at least seventy-five percent (75%) of the outstanding shares entitled to vote on such amendment or repeal, voting together as a single class; provided, however, that if the Board of Directors recommends that stockholders approve such amendment or repeal at such meeting of stockholders, such amendment or repeal shall only require the affirmative vote of the majority of the outstanding shares entitled to vote on such amendment or repeal, voting together as a single class. Notwithstanding the foregoing, stockholder approval shall not be required unless mandated by the Certificate, these By-laws, or other applicable law.

SECTION 10. Notices. If mailed, notice to stockholders shall be deemed given when deposited in the mail, postage prepaid, directed to the stockholder at such stockholder's address as it appears on the records of the Corporation. Without limiting the manner by which notice otherwise may be given to stockholders, any notice to stockholders may be given by electronic transmission in the manner provided in Section 232 of the DGCL.

SECTION 11. Waivers. A written waiver of any notice, signed by a stockholder or director, or waiver by electronic transmission by such person, whether given before or after the time of the event for which notice is to be given, shall be deemed equivalent to the notice required to be given to such person. Neither the business to be transacted at, nor the purpose of, any meeting need be specified in such a waiver.

Effective as of November 4, 2021.

TAX MATTERS AGREEMENT

by and between

BLUEBIRD BIO, INC.

and

2SEVENTY BIO, INC.

Dated as of November 3, 2021

TAX MATTERS AGREEMENT

TAX MATTERS AGREEMENT

This TAX MATTERS AGREEMENT (this "Agreement") is entered into as of November 3, 2021, by and between bluebird bio, Inc. ("bluebird"), a Delaware corporation, and 2seventy bio, Inc. ("2seventy"), a Delaware corporation and wholly owned Subsidiary of bluebird. (bluebird and 2seventy are sometimes collectively referred to herein as the "Parties" and, as the context requires, individually referred to herein as a "Party").

W I T N E S S E T H:

WHEREAS, bluebird, acting together with its Subsidiaries, is a commercial biotechnology company engaged in the business of researching, developing, and commercializing transformative gene therapies for severe genetic diseases (the "Severe Genetic Disease Business," as such term is defined in the Separation Agreement) and cancer (the "Oncology Business," as such term is defined in the Separation Agreement).

WHEREAS, the Board of Directors of bluebird (the "Board") has determined that it is appropriate, desirable and in the best interests of bluebird and its stockholders to separate the Severe Genetic Disease Business and the Oncology Business.

WHEREAS, the Board has determined that it is appropriate, desirable and in the best interests of bluebird and its stockholders, to carry out the Separation and the Distribution and for each of bluebird and 2seventy to be two separate publicly traded companies;

WHEREAS, for U.S. federal Income Tax purposes, it is the intention of the Parties that the Separation and the Distribution, taken together, will qualify as a reorganization within the meaning of Section 368(a)(1)(D) of the Code by reason of the Distribution qualifying under Section 355 of the Code;

WHEREAS, as of the date hereof, bluebird is the common parent of an Affiliated Group, including 2seventy, which has elected to file consolidated U.S. federal Income Tax Returns;

WHEREAS, the Parties desire to provide for and agree upon the allocation between the Parties of liabilities, and entitlements to refunds thereof, for certain Taxes arising prior to, at the time of, and subsequent to the Distribution, and to provide for and agree upon other matters relating to Taxes and to set forth certain covenants and indemnities relating to the Tax-Free Status;

WHEREAS, pursuant to that certain Securities Purchase Agreement, entered into as of September 7, 2021, by and among bluebird and the purchasers identified on the signature pages thereto (such purchasers, the "Purchasers," and such agreement, the "SPA"), bluebird sold to the Purchasers, and the Purchasers purchased from bluebird, (i) 2,272,727 shares of bluebird

Common Stock and (ii) warrants to purchase 2,272,727 shares of bluebird Common Stock (the "bluebird Warrants"); and

WHEREAS, pursuant to Section 4.18 of the SPA, in connection with the Separation and the Distribution, 2seventy will deliver to the Purchasers a new warrant in form and substance substantially identical to the bluebird Warrants (such warrants delivered by 2seventy, the "2seventy Warrants") for that number of shares of 2seventy Common Stock determined in accordance with Section 9(d) of the bluebird Warrants;

NOW, THEREFORE, in consideration of the foregoing and the mutual agreements, provisions and covenants contained in this Agreement, the Parties hereby agree as follows:

ARTICLE I
DEFINITIONS

Section 1.1 General. For purposes of this Agreement (including the recitals hereof), the following terms have the following meanings, and capitalized terms used but not otherwise defined herein shall have the meanings ascribed to them in the Separation Agreement:

"2seventy" has the meaning provided in the first sentence of this Agreement.

"2seventy Capital Stock" means all classes or series of capital stock of 2seventy, including (a) the 2seventy Common Stock, (b) all options, warrants and other rights to acquire such capital stock and (c) all instruments properly treated as stock in 2seventy for U.S. federal Income Tax purposes.

"2seventy Carryback" means any net operating loss, net capital loss, excess tax credit, or other similar Tax item of any member of the 2seventy Group which may or must be carried from one Tax Period to another prior Tax Period under the Code or other applicable Law.

"2seventy Common Stock" has the meaning set forth in the Separation Agreement.

"2seventy Disqualifying Act" means, following the Distribution, (a) any act, or failure or omission to act, by any member of the 2seventy Group that results in any Party (or any of its Affiliates) being responsible for Distribution Taxes pursuant to a Final Determination, regardless of whether such act or failure to act (i) is covered by a Post-Distribution Ruling or Unqualified Tax Opinion (or is subject to Section 6.1(d)), or (ii) occurs during or after the Restricted Period; (b) the direct or indirect acquisition of all or a portion of the stock of 2seventy (or any transaction or series of related transactions that is deemed to be such an acquisition for purposes of the Code and the Treasury Regulations promulgated thereunder) by any means whatsoever by any Person, including, for the avoidance of doubt, as a result of the receipt of 2seventy Capital Stock or 2seventy Warrants with respect to the instruments acquired by the Purchasers pursuant to the SPA or the exercise of the 2seventy Warrants; (c) any event (or series of events) involving

2seventy Capital Stock or any assets of any member of the 2seventy Group; or (d) any breach by any member of the 2seventy Group of any of its obligations under this Agreement.

"2seventy Group" means 2seventy and its Affiliates, as determined after the Distribution.

"2seventy Separate Return" means (a) any Tax Return of or including any member of the 2seventy Group (including any consolidated, combined or unitary return) that does not include any member of the bluebird Group and (b) any Tax Return relating to Transfer Taxes that 2seventy is obligated to file under applicable Law.

"2seventy Warrants" has the meaning set forth in the recitals hereof.

"Action" has the meaning set forth in the Separation Agreement.

"Active Conduct" means "active conduct" as defined in Section 355(b)(2) of the Code and the Treasury Regulations thereunder.

"Active Trade or Business" means the "Oncology Business," as such term is defined in the Ruling Request and the Representation Letter, constituting an active trade or business, within the meaning of Section 355(b) of the Code, of the separate affiliated group of 2seventy, as represented in the Representation Letter.

"Adjustment Request" means any formal or informal claim or request filed with any Tax Authority, or with any administrative agency or court, for the adjustment, refund, or credit of Taxes, including (a) any amended Tax Return claiming adjustment to the Taxes as reported on the Tax Return or, if applicable, as previously adjusted, (b) any claim for equitable recoupment or other offset, and (c) any claim for refund or credit of Taxes previously paid.

"Affiliate" means any entity that is directly or indirectly "controlled" by either the person in question or an Affiliate of such person. "Control" means the possession, directly or indirectly, of the power to direct or cause the direction of the management and policies of a person, whether through ownership of voting securities or other interests, by contract or otherwise. The term Affiliate shall refer to Affiliates of a person as determined immediately after the Distribution.

"Affiliated Group" means, with respect to a Party, the affiliated group (as that term is defined in Section 1504(a) of the Code and the Treasury Regulations thereunder) of which the Party is the common parent.

"Ancillary Agreement" has the meaning set forth in the Separation Agreement; provided, however, that for purposes of this Agreement, this Agreement shall not constitute an Ancillary Agreement.

"bluebird" has the meaning provided in the first sentence of this Agreement.

"bluebird Attribute Losses" has the meaning set forth in the definition of Distribution Taxes.

"bluebird Capital Stock" means all classes or series of capital stock of bluebird, including (a) the bluebird Common Stock, (b) all options, warrants and other rights to acquire such capital stock and (c) all instruments properly treated as stock of bluebird for U.S. federal Income Tax purposes.

"bluebird Common Stock" has the meaning set forth in the Separation Agreement.

"bluebird Disqualifying Act" means (a) any act, or failure or omission to act, by any member of the bluebird Group following the Distribution that results in any Party (or any of its Affiliates) being responsible for such Distribution Taxes pursuant to a Final Determination; (b) the direct or indirect acquisition of all or a portion of the stock of bluebird (or any transaction or series of related transactions that is deemed to be such an acquisition for purposes of the Code and the Treasury Regulations promulgated thereunder) by any means whatsoever by any Person, including, for the avoidance of doubt, as a result of the issuance of bluebird Common Stock or bluebird Warrants pursuant to the SPA or the exercise of the bluebird Warrants; (c) any event (or series of events) involving bluebird Capital Stock or any assets of any member of the bluebird Group; or (d) any failure to be true, inaccuracy in, or breach of any of bluebird's representations or statements contained in the Ruling Request or the Representation Letter to the extent relating to acts, omissions, events, conditions, facts or circumstances existing on or before the Distribution Effective Time.

"bluebird Group" means bluebird and its Affiliates, excluding any entity that is a member of the 2seventy Group.

"bluebird Separate Return" means (a) any Tax Return of or including any member of the bluebird Group (including any consolidated, combined or unitary return) that does not include any member of the 2seventy Group and (b) any Tax Return relating to Transfer Taxes that bluebird is obligated to file under applicable Law.

"bluebird Warrants" has the meaning set forth in the recitals hereof.

"Board" has the meaning set forth in the recitals hereof.

"Business Day" has the meaning set forth in the Separation Agreement.

"Code" means the U.S. Internal Revenue Code of 1986, as amended.

"Complete Pre-Distribution Period" means any Tax Period ending on or before the Distribution Date.

"Contribution" means the contribution by bluebird of the assets constituting the Oncology Business to 2seventy solely in exchange for 2seventy Common Stock and the assumption by 2seventy of any liabilities related to the Oncology Business, in each case as described in the Separation Agreement.

"Controlling Party" has the meaning set forth in Section 9.2(b) of this Agreement.

"DGCL" means the Delaware General Corporation Law.

"Dispute Notice" has the meaning set forth in Section 13.1.

"Disputed Tax Matter" has the meaning set forth in Section 13.3.

"Disputes" has the meaning set forth in Section 13.1.

"Distribution" has the meaning set forth in the Separation Agreement.

"Distribution Date" has the meaning set forth in the Separation Agreement.

"Distribution Effective Time" has the meaning set forth in the Separation Agreement.

"Distribution Losses" shall mean (a) all Distribution Taxes (including interest and penalties thereon) imposed (or, in the case of bluebird Attribute Losses, that would have been imposed if bluebird were a Full Taxpayer) pursuant to any settlement, Final Determination, judgment or otherwise; (b) all accounting, legal and other professional fees and court costs incurred in connection with such Distribution Taxes, as well as any other out-of-pocket costs incurred in connection with such Taxes; and (c) all reasonable costs and expenses and all damages associated with shareholder litigation or controversies and any amount paid by any member of the bluebird Group or member of the 2seventy Group in respect of the liability of shareholders, whether paid to any shareholder or to the IRS or any other Tax Authority, in each case, resulting from the failure of any Separation Transactions to have Tax-Free Status.

"Distribution Taxes" means (i) any and all Taxes required to be paid by or imposed on a Party or any of its Affiliates, plus (ii) without duplication, the hypothetical Taxes that would have been described in clause (i) if bluebird were a Full Taxpayer ("bluebird Attribute Losses"), in each case, resulting from, attributable to, or arising in connection with the failure of (a) the Contribution and Distribution, taken together, to qualify as a reorganization described in Sections 355(a) and 368(a)(1)(D) of the Code or (b) the stock distributed in the Distribution to constitute "qualified property" for purposes of Sections 355(d), 355(e) and Section 361(c) of the Code (or any corresponding provision of the Laws of other jurisdictions).

"Fifty-Percent or Greater Interest" has the meaning ascribed to such term for purposes of Section 355(e) of the Code.

"Final Determination" means the final resolution of liability for any Tax, which resolution may be for a specific issue or adjustment or for a taxable period, (a) by IRS Form 870 or 870-AD (or any successor forms thereto), on the date of acceptance by or on behalf of the taxpayer, or by a comparable form under the Laws of a state, local, or foreign taxing jurisdiction, except that a Form 870 or 870-AD or comparable form shall not constitute a Final Determination to the extent that it reserves (whether by its terms or by operation of Law) the right of the taxpayer to file a claim for refund or the right of the Tax Authority to assert a further deficiency in respect of such issue or adjustment or for such taxable period (as the case may be); (b) by a decision, judgment, decree, or other order by a court of competent jurisdiction, which has become final and unappealable; (c) by a closing agreement or accepted offer in compromise under Sections 7121 or 7122 of the Code, or a comparable agreement under the Laws of a state, local, or foreign taxing jurisdiction; (d) by any allowance of a refund or credit in respect of an overpayment of a Tax, but only after the expiration of all periods during which such refund may be recovered (including by way of offset) by the jurisdiction imposing such Tax; (e) by a final settlement resulting from a treaty-based competent authority determination; or (f) by any other final disposition, including by reason of the expiration of the applicable statute of limitations, the execution of a pre-filing agreement with the IRS or other Tax Authority, or by mutual agreement of the Parties.

"Full Taxpayer" means the assumption that each relevant member of the bluebird Group (a) is subject to the highest marginal regular statutory income Tax rate applicable to corporations, and (b) will not utilize any Tax Attribute other than a Tax Attribute arising from the adjustment at issue.

"Governmental Entity" has the meaning set forth in the Separation Agreement.

"Group" means the bluebird Group or the 2seventy Group, or both, as the context requires.

"Income Tax" means all U.S. federal, state, and local and foreign income, franchise or similar Taxes imposed on (or measured by) net income or net profits, and any interest, penalties, additions to tax or additional amounts in respect of the foregoing.

"IRS" means the U.S. Internal Revenue Service.

"Joint Return" means any Tax Return (including any consolidated, combined or unitary Tax Return) that relates to at least one asset or activity that is part of the Severe Genetic Disease Business, on the one hand, and at least one asset or activity that is part of the Oncology Business, on the other hand.

"Law" means the law of any Governmental Entity or political subdivision thereof, including statutes, regulations promulgated thereunder, and administrative and judicial interpretations thereof.

"Non-Controlling Party" has the meaning set forth in Section 9.2(b) of this Agreement.

"Non-Responsible Party" means the Party that is not the Responsible Party.

"Oncology Business" has the meaning set forth in the Separation Agreement.

"Parties" and "Party" have the meaning set forth in the first sentence of this Agreement.

"Past Practices" has the meaning set forth in Section 3.4(a) of this Agreement.

"Payor" has the meaning set forth in Section 4.2(a) of this Agreement.

"Person" means an individual, a partnership, a corporation, a limited liability company, an association, a joint stock company, a trust, a joint venture, an unincorporated organization or a Governmental Entity or any department, agency or political subdivision thereof, without regard to whether any entity is treated as disregarded for U.S. federal Income Tax purposes.

"Post-Distribution Period" means any Tax Period beginning after the Distribution Date and, in the case of any Straddle Period, the portion of such Tax Period beginning on the day after the Distribution Date.

"Pre-Distribution Period" means any Tax Period ending on or before the Distribution Date and, in the case of any Straddle Period, the portion of such Straddle Period ending on the Distribution Date.

"Post-Distribution Ruling" has the meaning set forth in Section 6.1 of this Agreement.

"Prime Rate" has the meaning set forth in the Separation Agreement.

"Privilege" means all privileges, immunities, or other protections from disclosure which may be asserted under applicable Law, including any privilege arising under or relating to the attorney-client relationship (including the attorney-client and work product privileges), the accountant-client privilege and any privilege relating to internal evaluation processes.

"Proposed Acquisition Transaction" means a transaction or series of transactions (or any agreement, understanding or arrangement, within the meaning of Section 355(e) of the Code and Treasury Regulation Section 1.355-7, or any other regulations promulgated thereunder, to enter into a transaction or series of transactions), whether such transaction is supported by 2seventy management or shareholders, is a hostile acquisition, merger, consolidation or otherwise, as a result of which any Person or any group of related Persons would (directly or indirectly) acquire, or have the right to acquire, from 2seventy and/or one or more direct or indirect holders of

outstanding shares of 2seventy Capital Stock, a number of shares of 2seventy Capital Stock that would, when combined with any other changes in ownership of 2seventy Capital Stock pertinent for purposes of Section 355(e) of the Code (other than the receipt of 2seventy Capital Stock or 2seventy Warrants with respect to the instruments acquired by the Purchasers pursuant to the SPA or the exercise of the 2seventy Warrants, comprise thirty percent (30%), or more of (a) the value of all outstanding shares of stock of 2seventy as of the date of such transaction, or in the case of a series of transactions, the date of the last transaction of such series, or (b) the total combined voting power of all outstanding shares of voting stock of 2seventy as of the date of such transaction, or in the case of a series of transactions, the date of the last transaction of such series. Notwithstanding the foregoing, a Proposed Acquisition Transaction shall not include (i) the adoption by 2seventy of a shareholder rights plan and (ii) issuances by 2seventy that satisfy Safe Harbor VIII (relating to acquisitions in connection with a Person's performance of services). For purposes of determining whether a transaction constitutes an indirect acquisition, any recapitalization resulting in a shift of voting power or any redemption of shares of stock shall be treated as an indirect acquisition of shares of stock by the non-exchanging shareholders. This definition and the application thereof is intended to monitor compliance with Section 355(e) of the Code and shall be interpreted accordingly. Any clarification of, or change in, the statute or regulations promulgated under Section 355(e) of the Code shall be incorporated in this definition and its interpretation.

"Purchasers" has the meaning set forth in the recitals hereof.

"Representation Letter" means the Officer's Certificate of bluebird on behalf of itself and its Affiliates (including 2seventy), dated November 3, 2021, as amended or supplemented, including any appendices and exhibits attached thereto or included therewith, submitted to Goodwin Procter LLP.

"Required Party" has the meaning set forth in Section 4.2 of this Agreement.

"Responsible Party" means, with respect to any Tax Return, the Party having responsibility for preparing and filing such Tax Return under this Agreement.

"Restricted Period" means the period beginning at the Distribution Effective Time and ending on the two-year anniversary of the day after the Distribution Date.

"Retention Date" has the meaning set forth in Section 8.1 of this Agreement.

"Ruling" means the IRS private letter ruling issued to bluebird in response to the Ruling Request.

"Ruling Request" means the request for ruling in connection with the Separation Transactions (including all attachments, exhibits, and other materials submitted with such ruling request letter) and any amendment or supplement to such ruling request letter.

"Section 336(e) Allocation Statement" has the meaning set forth in Section 3.5(b)(ii) of this Agreement.

"Section 336(e) Election" has the meaning set forth in Section 3.5(b)(i).

"Separate Return" means a bluebird Separate Return or a 2seventy Separate Return, as the case may be.

"Separation" has the meaning set forth in the Separation Agreement.

"Separation Agreement" means the Separation Agreement, as amended from time to time, by and between bluebird and 2seventy.

"Separation Taxes" means any and all Taxes (other than Distribution Taxes) required to be paid by or imposed on a Party or any of its Affiliates resulting from, attributable to, or arising in connection with the Distribution or any other Separation Transaction including Transfer Taxes.

"Separation Transactions" means, collectively, the Contribution, the Separation, and the Distribution.

"Severe Genetic Disease Business" has the meaning set forth in the Separation Agreement.

"SPA" has the meaning set forth in the recitals hereof.

"Straddle Period" means any Tax Period that begins on or before and ends after the Distribution Date.

"Subsidiary" has the meaning set forth in the Separation Agreement.

"Substantial Authority" has the meaning set forth in Section 3.4(c) of this Agreement.

"Tax" or "Taxes" means any income, gross income, gross receipts, profits, capital stock, franchise, withholding, payroll, social security, workers compensation, unemployment, disability, property, ad valorem, value added, stamp, excise, severance, occupation, service, sales, use, license, lease, transfer, import, export, escheat, alternative minimum, estimated or other tax (including any fee, assessment, or other charge in the nature of or in lieu of any tax), imposed by any Governmental Entity or political subdivision thereof, and any interest, penalty, additions to tax or additional amounts in respect of the foregoing.

"Tax Advisor" means a tax counsel or tax accountant of recognized national standing.

"Tax Attribute" means a net operating loss, carryforward under Section 163(j) of the Code, net capital loss, unused investment credit, unused foreign Tax credit, excess charitable contribution, general business credit, research and development credit, orphan drug credit, earnings and profits, basis, or any other Tax Item that could reduce a Tax or create a Tax Benefit.

"Tax Authority" means, with respect to any Tax, the Governmental Entity or political subdivision thereof that imposes such Tax, and the agency (if any) charged with the assessment, administration, collection, enforcement, determination or imposition of such Tax for such entity or subdivision.

"Tax Benefit" means any Tax Refund, credit or other reduction in Tax payments (determined on a "with and without" basis).

"Tax Contest" means an audit, review, examination, or any other administrative or judicial proceeding with the purpose or effect of redetermining Taxes (including any administrative or judicial review of any claim for refund).

"Tax-Free Status" means the qualification of the Contribution and the Distribution, taken together, (a) as a reorganization described in Sections 355(a) and 368(a)(1)(D) of the Code; (b) as a transaction in which the stock distributed thereby is "qualified property" for purposes of Sections 355(d), 355(e) and 361(c) of the Code; and (c) as a transaction in which bluebird, 2seventy and the shareholders of bluebird recognize no income or gain for U.S. federal Income Tax purposes pursuant to Sections 355, 361 and 1032 of the Code (in each case, without regard to the distribution and receipt of 2seventy Capital Stock or 2seventy Warrants pursuant to the Distribution with respect to the instruments acquired by the Purchasers pursuant to the SPA).

"Tax Item" means, with respect to any Income Tax, any item of income, gain, loss, deduction, or credit.

"Tax Opinion" means the opinion of Goodwin Procter LLP delivered to bluebird in connection with the Distribution.

"Tax Period" means, with respect to any Tax, the period for which the Tax is reported as provided under the Code or other applicable Law.

"Tax Records" means any (a) Tax Returns, (b) Tax Return work papers, (c) documentation relating to any Tax Contests, and (d) any other books of account or records (whether or not in written, electronic or other tangible or intangible forms and whether or not stored on electronic or any other medium) required to be maintained under the Code or other applicable Laws or under any record retention agreement with any Tax Authority, in each case filed with respect to or otherwise relating to Taxes.

"Tax Refund" means any refund of Taxes (including any overpayment of Taxes that can be refunded or, alternatively, credited or applied to future Taxes payable), including any interest paid on or with respect to such refund of Taxes.

"Tax Return" or "Return" means any report of Taxes due, any claim for refund of Taxes paid, any information return with respect to Taxes, or any other similar report, statement, declaration, or document required to be filed under the Code or other Law with respect to Taxes, including any attachments, exhibits, or other materials submitted with any of the foregoing, and including any amendments or supplements to any of the foregoing.

"Third Party" means any Person other than the Parties or any of their respective Subsidiaries.

"Transaction Agreement" has the meaning set forth in the Separation Agreement.

"Transfer Taxes" means all sales, use, transfer, real property transfer, intangible, recordation, registration, documentary, stamp or similar Taxes imposed on the Distribution or any of the other Separation Transactions (excluding, for the avoidance of doubt, any Income Taxes).

"Treasury Regulations" means the regulations promulgated from time to time under the Code as in effect for the relevant Tax Period.

"Unqualified Tax Opinion" means an unqualified "will" opinion of a Tax Advisor, which Tax Advisor is reasonably acceptable to bluebird, on which bluebird may rely to the effect that a transaction will not affect the Tax-Free Status. Any such opinion must assume that the Separation Transactions would have qualified for Tax-Free Status if the transaction in question did not occur.

ARTICLE II
LIABILITY FOR TAXES AND DISTRIBUTION LOSSES

Section 2.1 General Rule.

(a) bluebird Liability. bluebird shall be liable for, and shall indemnify and hold harmless the 2seventy Group from and against any liability for:

(i) Taxes that are allocated to bluebird under this Article II;

(ii) Separation Taxes;

(iii) any Taxes resulting from a breach of any of bluebird's covenants in this Agreement, the Separation Agreement or any Ancillary Agreement; and

(iv) any Distribution Losses that are the responsibility of bluebird under Section 6.3.

(b) 2seventy Liability. 2seventy shall be liable for, and shall indemnify and hold harmless the bluebird Group, in each case assuming the relevant member of the bluebird Group is a Full Taxpayer, from and against any liability for:

(i) Taxes that are allocated to 2seventy under this Article II;

(ii) any Taxes resulting from a breach of any of 2seventy's covenants in this Agreement, the Separation Agreement or any Ancillary Agreement; and

(iii) any Distribution Losses that are the responsibility of 2seventy under Section 6.3.

Section 2.2 Allocation Of Taxes For Pre-Distribution Periods. Except with respect to Taxes described in Section 2.1(a)(ii), Section 2.1(a)(iii), Section 2.1(a)(iv), Section 2.1(b)(ii) and Section 2.1(b)(iii), Taxes shall be allocated as follows:

(a) Allocation of Taxes Relating to Joint Returns. With respect to any Joint Return, bluebird shall be responsible for any and all Taxes for Pre-Distribution Periods due with respect to or required to be reported on any such Tax Return (including any increase in such Tax as a result of a Final Determination) which Taxes are attributable to the Severe Genetic Disease Business or the Oncology Business.

(b) Allocation of Tax Relating to Separate Returns.

(i) bluebird shall be responsible for any and all Taxes for (A) Complete Pre-Distribution Periods due with respect to or required to be reported on any 2seventy Separate Return and (B) all Tax Periods due with respect to or required to be reported on any bluebird Separate Return (including, in each case, any increase in such Tax as a result of a Final Determination).

(ii) 2seventy shall be responsible for any and all Taxes due with respect to or required to be reported on any 2seventy Separate Return for (A) Pre-Distribution Periods (other than Complete Pre-Distribution Periods) and (B) Post-Distribution Periods (including, in each case, any increase in such Tax as a result of a Final Determination).

ARTICLE III
PREPARATION AND FILING OF TAX RETURNS

Section 3.1 bluebird's Responsibility. bluebird shall prepare and file, or cause to be prepared and filed:

(a) All Joint Returns that bluebird or any of its Affiliates is legally responsible for preparing or filing under applicable Law; and

(b) bluebird Separate Returns.

Section 3.2 2seventy's Responsibility. 2seventy shall prepare and file, or cause to be prepared and filed, all Tax Returns required to be filed by or with respect to members of the 2seventy Group other than those Tax Returns which bluebird is required to prepare and file under Section 3.1.

Section 3.3 Cooperation. The Parties shall provide, and shall cause their Affiliates to provide, assistance and cooperation to one another in accordance with Article VII with respect to the preparation and filing of Tax Returns, including providing information required to be provided in Article VII.

Section 3.4 Tax Reporting Practices.

(a) bluebird General Rule. Except as provided in Section 3.4(c), bluebird shall prepare any Tax Return which it has the obligation and right to prepare and file, or cause to be prepared and filed, under Section 3.1, in accordance with the past practices, accounting methods, elections or conventions of bluebird ("Past Practices") used with respect to the items reflected on such Tax Return (unless there is no reasonable basis for the use of such Past Practices), and to the extent any items are not covered by Past Practices (or in the event that there is no reasonable basis for the use of such Past Practices), in accordance with reasonable Tax accounting practices selected by bluebird.

(b) 2seventy General Rule. Except as provided in Section 3.4(c), with respect to any Tax Return that 2seventy has the obligation and right to prepare and file, or cause to be prepared and filed, under Section 3.2, such Tax Return shall be prepared in accordance with Past Practices used with respect to the items reflected on such Tax Returns (unless there is no reasonable basis for the use of such Past Practices), and to the extent any items are not covered by Past Practices (or in the event that there is no reasonable basis for the use of such Past Practices), in accordance with reasonable Tax accounting practices selected by 2seventy.

(c) Reporting of Separation Transactions and Other Transactions. The Tax treatment of the Separation Transactions reported on any Tax Return shall be consistent with the treatment thereof in the Ruling Request, Ruling, Representation Letter and Tax Opinion, and the

Tax treatment of the transactions contemplated by the Transition Services Agreement reported on any Tax Return shall be consistent with the treatment determined by bluebird in its sole discretion, in each case taking into account the jurisdiction in which such Tax Returns are filed, unless the Parties jointly determine that there is not at least "substantial authority," within the meaning of Section 6662(d)(2)(B)(i) of the Code (or any corresponding or similar provision of state, local or foreign Law) ("Substantial Authority") for such Tax treatment. Such treatment reported on any Tax Return for which 2seventy is the Responsible Party shall be consistent with that on any Tax Return filed or to be filed by bluebird or any member of the bluebird Group or caused to be filed by bluebird, unless the Parties jointly determine that there is not Substantial Authority for such Tax treatment. Notwithstanding the foregoing, bluebird shall have the right to make a "protective" Section 336(e) Election in accordance with Section 3.5(b).

Section 3.5 Certain Elections.

(a) Consolidated or Combined Tax Returns. 2seventy will elect and join, and will cause its respective Affiliates to elect and join, in filing any Joint Returns that bluebird determines are required to be filed or that bluebird elects to file pursuant to Section 3.1(a).

(b) Protective Section 336(e) Election.

(i) The Parties agree that bluebird in its sole discretion may make, and 2seventy will join in filing, timely protective elections under Section 336(e) of the Code and the Treasury Regulations issued thereunder, including under Treasury Regulation Sections 1.336-2(h)(1)(i) and 1.336-2(j), for each member of the 2seventy Group that is a domestic corporation for U.S. federal Tax purposes with respect to the Distribution (a "Section 336(e) Election"). It is intended that a Section 336(e) Election will have no effect unless the Distribution is a "qualified stock disposition," as defined in Treasury Regulation Section 1.336-1(b)(6), by reason of the application of Treasury Regulation Section 1.336-1(b)(5)(i)(B) or Treasury Regulation Section 1.336-1(b)(5)(ii).

(ii) If bluebird determines to make a Section 336(e) Election pursuant to Section 3.5(b)(i), bluebird and 2seventy shall cooperate in the preparation, completion and filing of the Section 336(e) Election, including filing any statements, amending any Tax Returns or undertaking such other actions reasonably necessary to carry out the Section 336(e) Election. bluebird shall reasonably determine the "Aggregate Deemed Asset Disposition Price" and the "Adjusted Grossed-Up Basis" (each as defined under applicable Treasury Regulations) and the allocation of such Aggregate Deemed Asset Disposition Price and Adjusted Grossed-Up Basis among the disposition date assets of 2seventy and its Subsidiaries, each in accordance with Section 336(e) of the Code and the applicable Treasury Regulations (the "Section 336(e) Allocation Statement"), and shall provide 2seventy (A) a draft of such statement for its review and comment fifteen (15)

Business Days prior to the due date for filing such statement and (B) a copy of such statement as filed. To the extent the Section 336(e) Election becomes effective, each Party agrees not to take any position (and to cause each of its Affiliates not to take any position) that is inconsistent with the Section 336(e) Election, including the Section 336(e) Allocation Statement, on any Tax Return, in connection with any Tax Contest or for any other Tax purposes (in each case, excluding any position taken for financial accounting purposes), except as may be required by a Final Determination.

Section 3.6 Right to Review Tax Returns. The Responsible Party with respect to any Tax Return shall make the portion of a draft of such Tax Return which is relevant to the determination of the Non-Responsible Party's rights or obligations under this Agreement available for review by the Non-Responsible Party, if requested, to the extent (a) such Tax Return relates to Taxes that could reasonably be expected to be equal to or in excess of $100,000 and that are the subject of a Tax Contest and for which the Non-Responsible Party would reasonably be expected to be liable, (b) such Tax Return relates to a Tax Benefit that could reasonably be expected to be equal to or in excess of $100,000 and for which the Non-Responsible Party would reasonably be expected to have a claim under this Agreement, or (c) the Non-Responsible Party reasonably determines that it must inspect such Tax Return to confirm compliance with the terms of this Agreement. The Responsible Party shall (x) use its reasonable best efforts to make such portion of such Tax Return available for review as required under this paragraph sufficiently in advance of the due date for filing of such Tax Return to provide the Non-Responsible Party with a meaningful opportunity to analyze and comment on such Tax Return and (y) use reasonable efforts to have such Tax Return modified before filing in accordance with any reasonable comments of the Non-Responsible Party. The Parties shall attempt in good faith to resolve any issues arising out of the review of such Tax Return.

Section 3.7 Adjustment Requests and 2seventy Carrybacks.

(a) 2seventy hereby agrees that, unless bluebird consents in writing (which consent may not be unreasonably withheld, conditioned or delayed) or as required by Law, (i) no member of the 2seventy Group shall file an Adjustment Request with respect to any Tax Return for a Pre-Distribution Period or Straddle Period, and (ii) any available elections to waive the right to claim in any Pre-Distribution Period with respect to any Tax Return any 2seventy Carryback arising in a Post-Distribution Period shall be made, and no affirmative election shall be made to claim any such 2seventy Carryback.

(b) bluebird hereby agrees that, unless 2seventy consents in writing (which consent may not be unreasonably withheld, conditioned, or delayed) or as required by Law, no member of the bluebird Group shall file any Adjustment Request with respect to any Tax Return if the result could reasonably be expected to change the Tax liability for which any member of

the 2seventy Group is liable under Section 2.1(b) for any Tax Period in an amount equal to or in excess of $100,000.

Section 3.8 Apportionment of Tax Attributes. bluebird shall advise 2seventy in writing of a reasonable allocation of any Tax Attributes, which bluebird shall determine in accordance with a reasonable interpretation of the Code, Treasury Regulations, and any other applicable Law. The Parties and all members of their respective Groups shall prepare all Tax Returns in accordance with such allocation. Notwithstanding anything to the contrary contained herein, for the avoidance of doubt, the Parties agree that bluebird is not warranting or guaranteeing the amount of any such Tax Attributes.

ARTICLE IV
TAX PAYMENTS

Section 4.1 Payment of Joint Return and Separate Return Taxes. Each Party shall pay, or shall cause to be paid, to the applicable Tax Authority when due all Taxes owed by such Party or a member of such Party's Group with respect to a Joint Return or Separate Return.

Section 4.2 Indemnification Payments.

(a) If any Party (the "Payor") is required under applicable Law to pay to a Tax Authority a Tax that another Party (the "Required Party") is liable for under this Agreement, the Payor shall provide notice to the Required Party for the amount due, accompanied by evidence of payment and a statement detailing the Taxes paid and describing in reasonable detail the particulars relating thereto. Such Required Party shall have a period of thirty (30) days after the receipt of notice to respond thereto. Unless the Required Party disputes the amount it is liable for under this Agreement, the Required Party shall reimburse the Payor within forty-five (45) Business Days of delivery by the Payor of the notice described above. To the extent the Required Party does not agree with the amount the Payor claims the Required Party is liable for under this Agreement, the dispute shall be resolved in accordance with Article XIII. Any reimbursement shall include interest on the Tax payment computed at the Prime Rate based on the number of days from the date of the payment to the Tax Authority to the date of reimbursement under this Section 4.2.

(b) Any Tax indemnity payment required to be made by the Required Party pursuant to this Section 4.2 shall be reduced by any corresponding Tax Benefit payment required to be made to the Required Party by the other Party pursuant to Article V. For the avoidance of doubt, a Tax Benefit payment is treated as corresponding to a Tax indemnity payment to the extent the Tax Benefit realized is directly attributable to the same Tax Item (or adjustment of such Tax Item pursuant to a Final Determination) that gave rise to the Tax indemnity payment.

(c) All indemnification payments under this Agreement shall be made by bluebird directly to 2seventy and by 2seventy directly to bluebird; provided, however, that if the Parties mutually agree with respect to any such indemnification payment, any member of the bluebird Group, on the one hand, may make such indemnification payment to any member of the 2seventy Group, on the other hand, and vice versa. All indemnification payments shall be treated in the manner described in Article XII.

ARTICLE V
TAX BENEFITS

Section 5.1 Tax Benefits.

(a) If a member of the 2seventy Group realizes any Tax Benefit resulting from, attributable to or arising in connection with a Section 336(e) Election, and such Tax Benefit would not have arisen but for such election (determined on a "with and without" basis), 2seventy shall make a payment to bluebird within thirty (30) Business Days following each such realization of a Tax Benefit, in an amount equal to (A) the product of (x) such Tax Benefit, times (y) the percentage of the total related Distribution Losses represented by the portion of such total Distribution Losses for which the bluebird Group is responsible pursuant to Section 6.3, plus (B) interest on such amount computed at the Prime Rate based on the number of days from the date of such actual realization of the Tax Benefit to the date of payment of such amount under this Section 5.1; provided, however, that (i) such payments shall be reduced by all reasonable costs incurred by the 2seventy Group to amend any Tax Returns or other governmental filings, and (ii) if a Tax Benefit is realized (determined on a "with and without" basis) as a result of an audit adjustment by a tax authority for a tax period that has already been completed as of the time of such adjustment, then, solely for purposes of determining (x) the date on which 2seventy must make a payment to bluebird in respect of such Tax Benefit, (y) the date on which 2seventy must provide the notice described in Section 5.1(b) , and (z) the date from which interest computed at the Prime Rate accrues on such amount, such Tax Benefit shall be treated as having been realized as of the date on which the applicable tax authority issued such adjustment.

(b) No later than thirty (30) Business Days after a Tax Benefit described in Section 5.1 is realized by a member of the 2seventy Group, 2seventy shall provide bluebird with notice of the amount payable to bluebird by 2seventy pursuant to this Article V. In the event that bluebird disagrees with any such calculation described in this Section 5.1(b), bluebird shall so notify 2seventy in writing within thirty (30) Business Days of receiving the written calculation set forth above in this Section 5.1(b). bluebird and 2seventy shall endeavor in good faith to resolve such disagreement, and, failing that, the amount payable under this Article V shall be determined in accordance with the disagreement resolution provisions of Article XIII as promptly as practicable.

ARTICLE VI
TAX-FREE STATUS

Section 6.1 Restrictions on 2seventy.

(a) 2seventy will not take or fail to take, or permit any 2seventy Affiliate, as the case may be, to take or fail to take, any action (i) where such action or failure to act would be inconsistent with or cause to be untrue any statement, information, covenant or representation in the Ruling Request, Ruling, Representation Letter, Tax Opinion, any Unqualified Tax Opinion, or any Post-Distribution Ruling, or (ii) which adversely affects or could reasonably be expected to adversely affect the Tax-Free Status of the Separation Transaction.

(b) During the Restricted Period, 2seventy shall continue and cause to be continued the Active Conduct of the Active Trade or Business.

(c) During the Restricted Period, 2seventy shall not:

(i) enter into any Proposed Acquisition Transaction, approve any Proposed Acquisition Transaction for any purpose, or to the extent 2seventy or any other member of the 2seventy Group has the right to prohibit any Proposed Acquisition Transaction, allow any Proposed Acquisition Transaction to occur (including, but not limited to, by (A) redeeming rights under a shareholder rights plan, (B) finding a tender offer to be a "permitted offer" under any such plan or otherwise causing any such plan to be inapplicable or neutralized with respect to any Proposed Acquisition Transaction, (C) approving any Proposed Acquisition Transaction, whether for purposes of Section 203 of the DGCL or any similar corporate statute, any "fair price" or other provision of 2seventy's charter or bylaws, (D) amending its certificate of incorporation to modify the provisions governing its Board of Directors or approving any such amendment, or otherwise) with respect to 2seventy;

(ii) merge or consolidate with any other Person, liquidate or partially liquidate;

(iii) engage (or permit a 2seventy Affiliate to engage) in any transaction that would result in 2seventy ceasing to be a company engaged in the Active Conduct of any Active Trade or Business;

(iv) make or revoke any election under Treasury Regulation Section 301.7701-3;

(v) in one or more transactions, sell, transfer or dispose of, or enter into any other transaction(s) treated for U.S. federal Income Tax purposes as a sale or exchange of (or approve or allow the sale, transfer or other disposition of, or other

transaction(s) treated for U.S. federal Income Tax purposes as a sale or exchange of) 25% or more of the net or gross assets of the Active Trade or Business (such percentage to be measured based on fair market value as of the Distribution Date), in each case other than (A) sales or transfers of assets in the ordinary course of business, (B) any cash paid to acquire assets from an unrelated Person in an arm's-length transaction, (C) any assets transferred to a Person that is disregarded as an entity separate from the transferor for U.S. federal Income Tax purposes or (D) any mandatory or optional repayment (or pre-payment) of any indebtedness of 2seventy or any member of the 2seventy Group;

(vi) amend its certificate of incorporation (or other organizational documents), or take any other action, whether through a stockholder vote or otherwise, affecting the voting rights of 2seventy Capital Stock (including, without limitation, through the conversion of one class of 2seventy Capital Stock into another class of 2seventy Capital Stock); or

(vii) redeem or otherwise repurchase, directly or through any Affiliate, any of its outstanding stock, or rights to acquire stock, after the Distribution, other than through purchases meeting the requirements of Section 4.05(1)(b) of Revenue Procedure 96-30 (without regard to the effect of Revenue Procedure 2003-48 on Revenue Procedure 96-30);

provided, however, that 2seventy shall be permitted to take such action or one or more actions set forth in the foregoing clauses (i) through (vii) if, prior to taking any such actions, (1) 2seventy shall have received a private letter ruling from the IRS, that confirms that such action or actions will not result in Distribution Taxes, taking into account such actions and any other relevant transactions in the aggregate (a "Post-Distribution Ruling"), in form and substance satisfactory to bluebird (including any representations made in connection with such Post-Distribution Ruling or assumptions that may be included in such Post-Distribution Ruling); (2) 2seventy shall have received an Unqualified Tax Opinion that confirms that such action or actions will not result in Distribution Taxes, taking into account such actions and any other relevant transactions in the aggregate, in form and substance satisfactory to bluebird (including any representations made in connection with such Unqualified Tax Opinion or assumptions that may be included in such Unqualified Tax Opinion); or (3) bluebird shall have waived the requirement to obtain such Post-Distribution Ruling or Unqualified Tax Opinion. Unless bluebird shall have waived the requirement to obtain the Post-Distribution Ruling or Unqualified Tax Opinion described in this paragraph, 2seventy shall provide a copy of the Post-Distribution Ruling or the Unqualified Tax Opinion described in this paragraph to bluebird as soon as practicable prior to taking or failing to take any action set forth in the foregoing clause (i) through (vii). bluebird's evaluation of a Post-Distribution Ruling or Unqualified Tax Opinion may consider, among other factors, the appropriateness of any underlying assumptions, representations, and covenants made in

connection with such Post-Distribution Ruling or Unqualified Tax Opinion. 2seventy shall bear all costs and expenses of securing any such Post-Distribution Ruling or Unqualified Tax Opinion and shall reimburse bluebird for all reasonable out-of-pocket costs and expenses that bluebird may incur in good faith in seeking to obtain or evaluate any such Post-Distribution Ruling or Unqualified Tax Opinion.

(d) 2seventy shall not take or fail to take any action, in the Restricted Period, that would reasonably be expected to increase the Tax liability of the bluebird Group in connection with the Separation Transactions.

Section 6.2 Restrictions on bluebird. bluebird agrees that it will not take or fail to take, or permit any bluebird Affiliate, as the case may be, to take or fail to take, any action where such action or failure to act would be inconsistent with or cause to be untrue any statement, information, covenant or representation in the Ruling Request, Ruling, Representation Letter, Tax Opinion, any Unqualified Tax Opinion, or any Post-Distribution Ruling. bluebird agrees that it will not take or fail to take, or permit any bluebird Affiliate, as the case may be, to take or fail to take, any action which adversely affects or could reasonably be expected to adversely affect the Tax-Free Status of the Separation, the Distribution, or any other Separation Transaction; provided, however, that this Section 6.2 shall not be construed as obligating bluebird to consummate the Separation or the Distribution, nor shall it be construed as preventing bluebird from terminating the Separation Agreement pursuant to Section 10.10 thereof. For the avoidance of doubt, 2seventy's sole recourse for violations of this Section 6.2 shall be as set forth in Section 6.3.

Section 6.3 Liability For Distribution Losses. In the event that, pursuant to a Final Determination, Distribution Taxes become due and payable to a Tax Authority or a bluebird Attribute Loss occurs, then, notwithstanding anything to the contrary in this Agreement:

(a) if and to the extent such Distribution Taxes and/or bluebird Attribute Losses result from Section 355(e) of the Code:

(i) as a result of an acquisition of a Fifty-Percent or Greater Interest in bluebird, then bluebird shall be responsible for such Distribution Losses.

(ii) as a result of an acquisition of a Fifty-Percent or Greater Interest in 2seventy, then 2seventy shall be responsible for such Distribution Losses.

(b) if and to the extent such Distribution Taxes and/or bluebird Attribute Losses do not result from Section 355(e) of the Code:

(i) if such Distribution Taxes and/or bluebird Attribute Losses are attributable to a 2seventy Disqualifying Act and are not also attributable to a bluebird Disqualifying Act, then 2seventy shall be responsible for such Distribution Losses;

(ii) if such Distribution Taxes and/or bluebird Attribute Losses are attributable to a bluebird Disqualifying Act and are not also attributable to a 2seventy Disqualifying Act, then bluebird shall be responsible for such Distribution Losses;

(iii) if such Distribution Taxes and/or bluebird Attribute Losses are attributable to both a 2seventy Disqualifying Act and a bluebird Disqualifying Act, then responsibility for any Distribution Losses shall be shared by bluebird and 2seventy according to relative fault; and

(iv) if such Distribution Taxes and/or bluebird Attribute Losses are not attributable to a bluebird Disqualifying Act or a 2seventy Disqualifying Act, then bluebird shall be responsible for any Distribution Losses.

For the avoidance of doubt, and notwithstanding anything to the contrary in this Agreement, under no circumstances shall bluebird be liable to 2seventy in respect of any bluebird Attribute Losses.

ARTICLE VII
ASSISTANCE AND COOPERATION

Section 7.1 Assistance and Cooperation.

(a) The Parties shall cooperate (and cause their respective Affiliates to cooperate) with each other and with each other's agents, including accounting firms and legal counsel, in connection with Tax matters relating to the Parties and their Affiliates including (i) preparation and filing of Tax Returns, (ii) determining the liability for and amount of any Taxes due (including estimated Taxes) or the right to and amount of any refund of Taxes, (iii) examinations of Tax Returns, and (iv) any administrative or judicial proceeding in respect of Taxes assessed or proposed to be assessed. Such cooperation shall include making all information and documents in their possession relating to the other Party and its Affiliates reasonably available to such other Party as provided in Article VIII of this Agreement. Each of the Parties shall also make available to the other, as reasonably requested and available, personnel (including officers, directors, employees and agents of the Parties or their respective Affiliates) responsible for preparing, maintaining, and interpreting information and documents relevant to Taxes, and personnel reasonably required as witnesses or for purposes of providing

information or documents in connection with any administrative or judicial proceedings relating to Taxes. The 2seventy Group shall cooperate with bluebird and take any and all actions reasonably requested by bluebird in connection with obtaining the Unqualified Tax Opinion or Post-Distribution Ruling (including, without limitation, by making any new representation or covenant, confirming any previously made representation or covenant or providing any materials or information requested by any Tax Advisor; provided that 2seventy shall not be required to make or confirm any representation or covenant that is inconsistent with historical facts or as to future matters or events over which it has no control).

(b) Any information or documents provided under this Article VII shall be kept confidential by the Party receiving the information or documents, except as may otherwise be necessary in connection with the filing of Tax Returns or in connection with any administrative or judicial proceedings relating to Taxes. Notwithstanding any other provision of this Agreement, the Separation Agreement or any Ancillary Agreement, (i) neither bluebird nor any bluebird Affiliate shall be required to provide 2seventy or any 2seventy Affiliate or any other Person access to or copies of any information, documents or procedures (including the proceedings of any Tax Contest) other than information, documents or procedures that relate solely to 2seventy, the business or assets of 2seventy or any 2seventy Affiliate, (ii) in no event shall bluebird or any bluebird Affiliate be required to provide 2seventy, any 2seventy Affiliate or any other Person access to or copies of any information or documents if such action could reasonably be expected to result in the waiver of any Privilege, and (iii) in no event shall 2seventy or any 2seventy Affiliate be required to provide bluebird, any bluebird Affiliate or any other Person access to or copies of any information or documents if such action could reasonably be expected to result in the waiver of any Privilege. In addition, in the event that bluebird determines that the provision of any information or documents to 2seventy or any 2seventy Affiliate, or 2seventy determines that the provision of any information or documents to bluebird or any bluebird Affiliate, could be commercially detrimental, violate any Law or agreement or waive any Privilege, the Parties shall use reasonable best efforts to permit compliance with its obligations under this Article VII in a manner that avoids any such harm or consequence.

Section 7.2 Income Tax Return Information. Each Party shall provide to the other Party information and documents relating to its Group reasonably required by the other Party to prepare Tax Returns, including any pro forma returns required by the Responsible Party for purposes of preparing such Tax Returns. Any information or documents the Responsible Party requires to prepare such Tax Returns shall be provided in such form as the Responsible Party reasonably requests and at or prior to the time reasonably specified by the Responsible Party so as to enable the Responsible Party to file such Tax Returns on a timely basis. 2seventy and bluebird acknowledge that time is of the essence in relation to any request for information, assistance or cooperation made by bluebird or 2seventy pursuant to Section 7.1 or this Section

7.2. 2seventy and bluebird acknowledge that failure to conform to the reasonable deadlines set by bluebird or 2seventy could cause irreparable harm.

Section 7.3 Reliance by bluebird. If any member of the 2seventy Group supplies information to a member of the bluebird Group in connection with any Tax position and an officer of a member of the bluebird Group signs a statement or other document under penalties of perjury in reliance upon the accuracy of such information, then upon the written request of such member of the bluebird Group identifying the information being so relied upon, the chief financial officer of 2seventy (or any officer of 2seventy as designated by the chief financial officer of 2seventy) shall certify in writing that to his or her knowledge (based upon consultation with appropriate employees and advisers) the information so supplied is accurate and complete.

Section 7.4 Reliance by 2seventy. If any member of the bluebird Group supplies information to a member of the 2seventy Group in connection with any Tax position and an officer of a member of the 2seventy Group signs a statement or other document under penalties of perjury in reliance upon the accuracy of such information, then upon the written request of such member of the 2seventy Group identifying the information being so relied upon, the chief financial officer of bluebird (or any officer of bluebird as designated by the chief financial officer of bluebird) shall certify in writing that to his or her knowledge (based upon consultation with appropriate employees and advisers) the information so supplied is accurate and complete.

ARTICLE VIII
TAX RECORDS

Section 8.1 Retention of Tax Records. Each Party shall preserve and keep all Tax Records exclusively relating to the assets and activities of its Group for Pre-Distribution Periods, and bluebird shall preserve and keep all other Tax Records relating to Taxes of the Groups for Pre-Distribution Periods, for so long as the contents thereof may be material in the administration of any matter under the Code or other applicable Law, but in any event until the later of (i) the expiration of any applicable statutes of limitations, or (ii) seven (7) years after the Distribution Date (such later date, the "Retention Date"). After the Retention Date, each Party may dispose of such Tax Records upon sixty (60) Business Days' prior written notice to the other Party. If, prior to the Retention Date, a Party reasonably determines that any Tax Records which it would otherwise be required to preserve and keep under this Article VIII are no longer material in the administration of any matter under the Code or other applicable Law and the other Party agrees, then such first Party may dispose of such Tax Records upon sixty (60) Business Days' prior notice to the other Party. Any notice of an intent to dispose given pursuant to this Section 8.1 shall include a list of the Tax Records to be disposed of describing in reasonable detail each file, book, or other record accumulation being disposed. The notified Party shall have the opportunity, at its cost and expense, to copy or remove, within such sixty (60) Business Day period, all or any part of such Tax Records. If, at any time prior to the Retention Date, a Party

determines to decommission or otherwise discontinue any computer program or information technology system used to access or store any Tax Records, then such Party may decommission or discontinue such program or system upon ninety (90) Business Days' prior notice to the other Party and the other Party shall have the opportunity, at its cost and expense, to copy, within such ninety (90) Business Day period, all or any part of the underlying data relating to the Tax Records accessed by or stored on such program or system.

Section 8.2 Access to Tax Records. The Parties and their respective Affiliates shall make available to each other for inspection and copying during normal business hours upon reasonable notice all Tax Records (and, for the avoidance of doubt, any pertinent underlying data accessed or stored on any computer program or information technology system) in their possession and shall permit the other Party and its Affiliates, authorized agents and representatives and any representative of a Tax Authority or other Tax auditor direct access, at the cost and expense of such other Party, during normal business hours upon reasonable notice to any computer program or information technology system used to access or store any Tax Records, in each case to the extent reasonably required by the other Party in connection with the preparation of Tax Returns or financial accounting statements, audits, litigation, or the resolution of items under this Agreement.

Section 8.3 Preservation of Privilege. No Party or any of its Affiliates shall provide access to, copies of, or otherwise disclose to any Person any documentation relating to Taxes existing prior to the Distribution Date to which Privilege may reasonably be asserted without the prior written consent of the other Party, such consent not to be unreasonably withheld.

ARTICLE IX
TAX CONTESTS

Section 9.1 Notice. Each of the Parties shall provide prompt notice to the other Party of any written communication from a Tax Authority regarding any pending Tax audit, assessment or proceeding or other Tax Contest of which it becomes aware related to Taxes for Tax Periods (i) for which it may be indemnified by the other Party hereunder or (ii) for which it may be required to indemnify the other Party hereunder (excluding, in the case of clause (ii), any Taxes attributable to any Post-Distribution Period), or otherwise relating to the Tax-Free Status or the Separation Transactions (including the resolution of any Tax Contest relating thereto). Such notice shall attach copies of the pertinent portion of any written communication from a Tax Authority and contain factual information (to the extent known) describing any asserted Tax liability in reasonable detail and shall be accompanied by copies of any notice and other documents received from any Tax Authority in respect of any such matters. If an indemnified Party has knowledge of an asserted Tax liability with respect to a matter for which it is to be indemnified hereunder and such Party fails to give the indemnifying Party prompt notice of such asserted Tax liability and the indemnifying Party is entitled under this Agreement to contest the

asserted Tax liability, then (a) if the indemnifying Party is precluded from contesting the asserted Tax liability in any forum as a result of the failure to give prompt notice, the indemnifying Party shall have no obligation to indemnify the indemnified Party for any Taxes arising out of such asserted Tax liability, and (b) if the indemnifying Party is not precluded from contesting the asserted Tax liability in any forum, but such failure to give prompt notice results in a material monetary detriment to the indemnifying Party, then any amount which the indemnifying Party is otherwise required to pay the indemnified Party pursuant to this Agreement shall be reduced by the amount of such detriment.

Section 9.2 Control of Tax Contests.

(a) Joint Return. In the case of any Tax Contest with respect to any Joint Return, bluebird shall have exclusive control over the Tax Contest, including exclusive authority with respect to any settlement of such Tax liability; provided, however, that in the case of any Tax Contest with respect to any Joint Return regarding Distribution Taxes for which 2seventy may reasonably be expected to become liable to make any indemnification payment to bluebird under this Agreement, 2seventy shall have the right to participate in such Tax Contest, and bluebird shall not settle such Tax Contest without the consent of 2seventy, which consent 2seventy shall not be unreasonably withheld, conditioned or delayed, taking into account the likelihood of success of such Tax Contest on its merits.

(b) Separate Returns. In the case of any Tax Contest with respect to any Separate Return, the Party having liability for the Tax pursuant to Article II hereof shall have exclusive control over the Tax Contest, including exclusive authority with respect to any settlement of such Tax liability, subject to Section 9.2(b)(i) and (ii) below.

(i) Settlement Rights. The Controlling Party shall have the sole right to contest, litigate, compromise and settle any Tax Contest without obtaining the prior consent of the Non-Controlling Party, provided, however, that the Controlling Party shall not settle any Tax Contest with respect to which the Non-Controlling Party may reasonably be expected to become liable to make any indemnification payment to the Controlling Party under this Agreement without the Non-Controlling Party's prior written consent (which consent may not be unreasonably withheld, conditioned, or delayed). Unless waived by the Parties in writing, in connection with any potential adjustment in a Tax Contest as a result of which adjustment the Non-Controlling Party may reasonably be expected to become liable to make any indemnification payment to the Controlling Party under this Agreement: (A) the Controlling Party shall keep the Non-Controlling Party informed in a timely manner of all actions taken or proposed to be taken by the Controlling Party with respect to such potential adjustment in such Tax Contest; (B) the Controlling Party shall timely provide the Non-Controlling Party copies of any written materials relating to such potential adjustment in such Tax Contest received from any Tax

Authority; (C) the Controlling Party shall timely provide the Non-Controlling Party with copies of any correspondence or filings submitted to any Tax Authority or judicial authority in connection with such potential adjustment in such Tax Contest; (D) the Controlling Party shall consult with the Non-Controlling Party and offer the Non-Controlling Party a reasonable opportunity to comment before submitting any written materials prepared or furnished in connection with such potential adjustment in such Tax Contest; and (E) the Controlling Party shall defend such Tax Contest diligently and in good faith. The failure of the Controlling Party to take any action specified in the preceding sentence with respect to the Non-Controlling Party shall not relieve the Non-Controlling Party of any liability and/or obligation which it may have to the Controlling Party under this Agreement except to the extent that the Non-Controlling Party was actually harmed by such failure, and in no event shall such failure relieve the Non-Controlling Party from any other liability or obligation which it may have to the Controlling Party. In the case of any Tax Contest described in this Section 9.2(b), "Controlling Party" means the Party entitled to control the Tax Contest under such section and "Non-Controlling Party" means the other Party.

(ii) Tax Contest Participation. Unless waived by the Parties in writing, the Controlling Party shall provide the Non-Controlling Party with written notice reasonably in advance of, and the Non-Controlling Party shall have the right to attend, any formally scheduled meetings with Tax Authorities or hearings or proceedings before any judicial authorities in connection with any potential adjustment in a Tax Contest pursuant to which the Non-Controlling Party may reasonably be expected to become liable to make any indemnification payment to the Controlling Party under this Agreement. The failure of the Controlling Party to provide any notice specified in this Section 9.2(b)(ii) to the Non-Controlling Party shall not relieve the Non-Controlling Party of any liability or obligation which it may have to the Controlling Party under this Agreement except to the extent that the Non-Controlling Party was actually harmed by such failure, and in no event shall such failure relieve the Non-Controlling Party from any other liability or obligation which it may have to the Controlling Party.

ARTICLE X
EFFECTIVE DATE

This Agreement shall be effective as of the Distribution Effective time.

ARTICLE XI
SURVIVAL OF OBLIGATIONS

The representations, warranties, covenants and agreements set forth in this Agreement shall be unconditional and absolute and shall remain in effect without limitation as to time.

ARTICLE XII
TAX TREATMENT OF PAYMENTS

Section 12.1 General Rule. Except as otherwise required by a change in applicable Law or as otherwise agreed to among the Parties, any payment made pursuant to this Agreement, the Separation Agreement or any Ancillary Agreement by: (a) 2seventy to bluebird shall be treated for all Tax purposes as (i) an adjustment to any cash contributed by bluebird to 2seventy in the Contribution, to the extent of such cash contribution, and thereafter (ii) a distribution by 2seventy to bluebird with respect to stock of 2seventy held by bluebird occurring immediately before the Distribution; or (b) bluebird to 2seventy shall be treated for all Tax purposes as a tax-free contribution by bluebird to 2seventy with respect to stock of 2seventy held by bluebird occurring immediately before the Distribution; provided, however, that the foregoing treatment shall apply in each case only to the extent the payment does not relate to a Tax allocated to the payor in accordance with Section 1552 of the Code or the Treasury Regulations thereunder or Treasury Regulation Section 1.1502-33(d) (or under corresponding principles of other applicable Laws); provided, further, that any payments made by 2seventy to bluebird pursuant to Section 5.1 shall be treated as an adjustment to the amount deemed contributed to 2seventy by bluebird in respect of the corresponding indemnity payment pursuant to Section 4.2. Neither Party shall take any position inconsistent with the treatment described in the preceding sentence, and in the event that a Tax Authority asserts that a Party's treatment of a payment pursuant to this Agreement should be other than as set forth in the preceding sentence, such Party shall use its commercially reasonable efforts to contest such challenge.

Section 12.2 Gross-Up of Indemnification Payments Made Pursuant to this Agreement. Except to the extent provided in Section 12.3, any Tax indemnity payment made by a Party under this Agreement shall be increased as necessary so that after making all payments in respect to Taxes imposed on or attributable to such indemnity payment, the recipient Party receives an amount equal to the sum it would have received had no such Taxes been imposed. For the avoidance of doubt, all payments required to be made by 2seventy to bluebird pursuant to this Section 12.2 shall be calculated assuming all members of the bluebird Group are Full Taxpayers.

Section 12.3 Interest. Anything herein to the contrary notwithstanding, to the extent one Party makes a payment of interest to another Party under this Agreement with respect to the period from the date that the Party receiving the interest payment made a payment of Tax to a Tax Authority to the date that the Party making the interest payment reimbursed the Party receiving the interest payment for such Tax payment, the interest payment shall be treated as interest expense to the Party making such payment (deductible to the extent provided by Law) and as interest income by the Party receiving such payment (includible in income to the extent provided by Law). The amount of the payment shall not be adjusted to take into account any

reduction in Tax to the Party making such payment or increase in Tax to the Party receiving such payment.

ARTICLE XIII
DISPUTE RESOLUTION

Section 13.1 Negotiation. A Party seeking resolution of a controversy, dispute or Action arising out of, in connection with, or in relation to the interpretation, performance, nonperformance, validity or breach of this Agreement or otherwise arising out of, or in any way related to, this Agreement or the transactions contemplated hereby, including any Action based on contract, tort, statute or constitution (collectively, "Disputes"), shall provide written notice of such Dispute to the other Party, specifying the terms of such Dispute in reasonable detail ("Dispute Notice"). The appropriate executives of the Parties who have authority to settle the Dispute (or such other individuals designated by the respective executives) shall attempt to resolve the Dispute through good faith negotiation for a reasonable period of time; provided, that such reasonable period shall not, unless otherwise agreed by the Parties in writing, exceed thirty (30) days from the time of receipt by a Party of the Dispute Notice. If the Dispute has not been resolved within thirty (30) days after receipt of the Dispute Notice, the respective Chief Executive Officers or their respective designees (with full settlement authority) of bluebird and 2seventy shall meet in person (or where necessary, by phone) at a mutually acceptable time and, if applicable, place, and thereafter as often as they reasonably deem necessary, to attempt in good faith to resolve the Dispute. Any contractual time period or deadline under this Agreement to which such Dispute relates occurring after the Dispute Notice is received shall not be deemed to have passed until such Dispute has been resolved pursuant to this Article XIII.

Section 13.2 Arbitration. Any Dispute that is not resolved pursuant to Section 14.1 within thirty (30) days after receipt of a Dispute Notice shall be resolved by final and binding arbitration pursuant to the procedures set forth in Section 8.2 of the Separation Agreement.

Section 13.3 Referral To Tax Advisor For Computational or Tax Law Disputes. Notwithstanding anything to the contrary in Article XIII, with respect to any Dispute involving one or more computational matters or pure questions of Tax Law, if the Parties are not able to resolve the Dispute through the negotiation process set forth in Section 13.1, then such computational matters or pure questions of Tax Law (each, a "Disputed Tax Matter**"**) will be referred to a Tax Advisor acceptable to each of the Parties to act as an arbitrator solely in order to resolve the Disputed Tax Matters. In the event that the Parties are unable to agree upon a Tax Advisor within forty-five (45) days of receipt of a Dispute Notice, the arbitrator or arbitrators of the underlying Dispute under Section 13.2 shall select a Tax Advisor on behalf of the Parties to act as an arbitrator in order to resolve the Disputed Tax Matters. The Tax Advisor may, in its discretion, obtain the services of any third-party appraiser, accounting firm or consultant that the Tax Advisor deems necessary to assist it in resolving such disagreement. The Tax Advisor shall

furnish written notice to the Parties of its resolution of any such Dispute Tax Matters as soon as practical, but in any event no later than thirty (30) Business Days after its acceptance of the matter for resolution. Any such resolution by the Tax Advisor will be conclusive and binding on the Parties, and shall not be reviewable by the arbitrator or arbitrators of the underlying Dispute under Section 13.2. Following receipt of the Tax Advisor's written notice to the Parties of its resolution of the Dispute Tax Matters, the Parties shall each take or cause to be taken any action necessary to implement such resolution of the Tax Advisor. Each Party shall pay its own fees and expenses (including the fees and expenses of its representatives) incurred in connection with the referral of the Disputed Tax Matters to the Tax Advisor. All fees and expenses of the Tax Advisor in connection with such referral shall be shared equally by the Parties. For the avoidance of doubt, the arbitrator or arbitrators of the underlying Dispute under Section 13.2 shall resolve all portions of any Dispute that are not Disputed Tax Matters, and shall resolve any question as to whether any portion of a Dispute is a Disputed Tax Matter.

Section 13.4 Continuity of Service and Performance. Unless otherwise agreed in writing, the Parties shall continue to provide service and honor all other commitments under this Agreement during the course of a Dispute with respect to all matters not subject to such Dispute.

Section 13.5 Injunctive or Other Equity Relief. Nothing contained in this Agreement shall deny any Party the right to seek injunctive or other equitable relief in the context of a bona fide emergency or prospective irreparable harm, and such an action may be filed and maintained notwithstanding any ongoing arbitration proceeding; provided, however, that any other relief not expressly permitted under this Section 13.5 must be pursued in accordance with Section 13.2, with all remedies being cumulative to the extent allowed by applicable Law. The Parties further agree that irreparable harm would occur, and thus need not be established, in an action to enforce the covenants set forth in Section 6.1, and that such action may be brought pursuant to this Section 13.5. The Parties further agree that any action brought under this Section 13.5 shall be brought exclusively in the courts within the State of Delaware set forth in Section 14.15 and that such courts shall have personal jurisdiction over the Parties in such action.

ARTICLE XIV
GENERAL PROVISIONS

Section 14.1 Complete Agreement; Construction. This Agreement, together with the Separation Agreement and the Ancillary Agreements, shall constitute the entire agreement between the Parties with respect to the subject matter hereof and shall supersede all previous negotiations, commitments, course of dealings and writings with respect to such subject matter; for the avoidance of doubt, the preceding clause shall apply to all other agreements, whether or not written, in respect of any Tax between or among any member or members of the bluebird Group, on the one hand, and any member or members of the 2seventy Group, on the other hand, which agreements shall be of no further effect between the Parties and any rights or obligations

existing thereunder shall be fully and finally settled, calculated as of the date hereof. In the event and to the extent that there shall be a conflict between the provisions of the Separation Agreement and the provisions of this Agreement, this Agreement shall control. Except as expressly set forth in the Separation Agreement or any Ancillary Agreement: (a) all matters to the extent relating to Taxes and Tax Returns of the Parties and their respective Subsidiaries shall be governed exclusively by this Agreement; and (b) for the avoidance of doubt, in the event of any conflict between the Separation Agreement or any Ancillary Agreement, on the one hand, and this Agreement, on the other hand, with respect to such matters, the terms and conditions of this Agreement shall govern.

Section 14.2 Transaction Agreements. Except as expressly set forth herein, this Agreement is not intended to address, and should not be interpreted to address, the matters specifically and expressly covered by the other Transaction Agreements.

Section 14.3 Counterparts. This Agreement may be executed in one or more counterparts, all of which shall be considered one and the same agreement, and shall become effective when one or more such counterparts have been signed by each of the Parties and delivered to each of the Parties. Counterparts may be delivered via electronic mail (including pdf or any electronic signature complying with the U.S. federal ESIGN Act of 2000, e.g., www.docusign.com) or other transmission method and any counterpart so delivered shall be deemed to have been duly and validly delivered and be valid and effective for all purposes.

Section 14.4 Survival of Agreement. Except as otherwise contemplated by this Agreement, all covenants and agreements of the Parties contained in this Agreement shall survive the Distribution Effective Time and remain in full force and effect in accordance with their applicable terms.

Section 14.5 Expenses. Except as otherwise expressly provided in this Agreement, each party and its Affiliates shall bear their own expenses incurred in connection with preparation of Tax Returns, Tax Contests, and other matters related to Taxes under the provisions of this Agreement.

Section 14.6 Notices. All notices, requests, claims, demands and other communications under this Agreement shall be in writing and shall be given or made (and shall be deemed to have been duly given or made upon receipt) by delivery in person, by overnight courier service, by facsimile or email with receipt confirmed (followed by delivery of an original via overnight courier service) or by registered or certified mail (postage prepaid, return receipt requested) to

the respective Parties at the following addresses (or at such other address for a Party as shall be specified in a notice given in accordance with this Section 14.6):

To bluebird:

bluebird bio, Inc.
60 Binney Street
Cambridge, MA 02142
Attn:
Facsimile:
Email:

To 2seventy:

2seventy bio, Inc.
60 Binney Street
Cambridge, MA 02142
Attn:
Facsimile:
Email:

Section 14.7 Waivers. The delay or failure of either Party to exercise or enforce any of its rights under this Agreement will not constitute, or be deemed to be, a waiver of those rights, nor will any single or partial exercise of any such rights preclude any other or further exercise thereof or the exercise of any other right. No waiver of any provision of this Agreement will be effective unless it is in writing and signed by the Party against which it is being enforced.

Section 14.8 Assignment. No Party may assign any rights or delegate any obligations arising under this Agreement, in whole or in part, directly or indirectly, without the prior written consent of the other Party (such consent not to be unreasonably withheld, conditioned or delayed), and any attempt to so assign any rights or delegate any obligations arising under this Agreement without such consent shall be void. Notwithstanding the foregoing, no such consent shall be required for any such assignment or delegation (a) with respect to bluebird, to a Subsidiary of bluebird (so long as such Subsidiary remains a Subsidiary of bluebird), (b) with respect to 2seventy, to a Subsidiary of 2seventy (so long as such Subsidiary remains a Subsidiary of 2seventy) or (c) to a *bona fide* Third Party in connection with a merger, reorganization, consolidation or the sale of all or substantially all the assets of a Party so long as the resulting, surviving or transferee entity assumes all the obligations of the assigning Party by operation of Law or pursuant to an agreement in form and substance reasonably satisfactory to the non-assigning Party; provided, however, that in the case of each of the preceding clauses (a) and (b),

no assignment permitted by this Section 14.8 shall release the assigning Party from liability for the full performance of its obligations under this Agreement.

Section 14.9 Successors and Assigns. The provisions of this Agreement and the obligations and rights hereunder shall be binding upon, inure to the benefit of and be enforceable by (and against) the Parties and their respective successors (whether by merger, acquisition of assets, or otherwise, and including any successor of bluebird or 2seventy succeeding to the Tax attributes of either under Section 381 of the Code) and permitted assigns.

Section 14.10 Termination and Amendment. This Agreement may be terminated, modified or amended at any time prior to the Distribution Effective Time by and in the sole and absolute discretion of bluebird without the approval of 2seventy or the stockholders of bluebird. In the event of such termination, no Party shall have any liability of any kind to the other Party or any other Person by reason of such termination. After the Distribution Effective Time, this Agreement may not be terminated, modified or amended except by an agreement in writing signed by bluebird and 2seventy.

Section 14.11 Payment Terms.

(a) Except as expressly provided to the contrary in this Agreement, any amount to be paid or reimbursed by a Party (and/or a member of such Party's Group) to the other Party (and/or a member of such other Party's Group) under this Agreement shall be paid or reimbursed hereunder within sixty (60) days after presentation of an invoice or a written demand therefor, in either case setting forth, or accompanied by, reasonable documentation or other reasonable explanation supporting such amount.

(b) Except as otherwise expressly provided to the contrary in this Agreement, any amount not paid when due pursuant to this Agreement (and any amount billed or otherwise invoiced or demanded and properly payable that is not paid within sixty (60) days of such bill, invoice or other demand) shall bear interest at a rate per annum equal to the Prime Rate, from time to time in effect, plus two percent (2%), calculated for the actual number of days elapsed, accrued from the date on which such payment was due up to the date of the actual receipt of payment.

(c) Without the consent of the party receiving any payment under this Agreement specifying otherwise, all payments to be made by either bluebird or 2seventy under this Agreement shall be made in U.S. dollars. Except as expressly provided herein, any amount which is not expressed in U.S. dollars shall be converted into U.S. dollars by using the exchange rate published on Bloomberg at 5:00 p.m., Eastern time, on the day before the relevant date, or in *The Wall Street Journal*, Eastern Edition, on such date if not so published on Bloomberg. Except as expressly provided herein, in the event that any indemnification payment required to be made

hereunder may be denominated in a currency other than U.S. dollars, the amount of such payment shall be converted into U.S. dollars on the date notice of the claim is given to the indemnifying Party.

Section 14.12 Subsidiaries. Each of the Parties shall cause to be performed, and hereby guarantees the performance of, all actions, agreements and obligations set forth herein to be performed by any Subsidiary of such Party or by any entity that becomes a Subsidiary of such Party at or after the Distribution Effective Time, in each case to the extent such Subsidiary remains a Subsidiary of the applicable Party. If, at any time, 2seventy acquires or creates one or more Subsidiaries that are includable in the 2seventy Group, all references to the 2seventy Group herein shall thereafter include a reference to such Subsidiaries.

Section 14.13 Third Party Beneficiaries. Except as specifically provided herein, this Agreement is solely for the benefit of the Parties and shall not be deemed to confer upon any Person other than the Parties any remedy, claim, liability, reimbursement, cause of action or other right beyond any that exist without reference to this Agreement.

Section 14.14 Titles And Headings. Titles and headings to sections herein are inserted for the convenience of reference only and are not intended to be a part of or to affect the meaning or interpretation of this Agreement.

Section 14.15 Governing Law. This Agreement will be governed by, construed and interpreted in accordance with the Laws of the State of Delaware, without giving effect to the conflicts of Laws principles thereof that might lead to the application of Laws other than the Laws of the State of Delaware. Each Party irrevocably consents to the exclusive jurisdiction, forum and venue of the Delaware Court of Chancery (and if the Delaware Court of Chancery shall be unavailable, any Delaware State court or the federal court sitting in the State of Delaware) over any and all claims, disputes, controversies or disagreements between the Parties under or related to this Agreement or any of the transactions contemplated hereby, including their execution, performance or enforcement, whether in contract, tort or otherwise. Each of the Parties hereby agrees that it shall not assert, and shall hereby waive, any claim or right or defense that it is not subject to the jurisdiction of such courts, that the venue is improper, that the forum is inconvenient or any similar objection, claim or argument.

Section 14.16 Severability. In the event any one or more of the provisions contained in this Agreement should be held invalid, illegal or unenforceable in any respect, the validity, legality and enforceability of the remaining provisions contained herein and therein shall not in any way be affected or impaired thereby. The Parties shall endeavor in good-faith negotiations to replace the invalid, illegal or unenforceable provisions with valid provisions, the economic effect of which comes as close as possible to that of the invalid, illegal or unenforceable provisions.

Section 14.17 Interpretation. Interpretation of this Agreement shall be governed by the following rules of construction: (a) words in the singular shall be held to include the plural and vice versa, and words of one gender shall be held to include the other gender as the context requires; (b) references to the terms "Section," "paragraph," and "clause" are references to the Sections, paragraphs, and clauses, respectively, of this Agreement unless otherwise specified; (c) the terms "hereof," "herein," "hereby," "hereto," and derivative or similar words refer to this entire Agreement; (d) references to "$" shall mean U.S. dollars; (e) the word "including" and words of similar import when used in this Agreement shall mean "including without limitation," unless otherwise specified; (f) the word "or" shall not be exclusive; (g) references to "written" or "in writing" include in electronic form; (h) unless the context requires otherwise, references to "party" shall mean bluebird or 2seventy, as appropriate, and references to "parties" shall mean bluebird and 2seventy; (i) provisions shall apply, when appropriate, to successive events and transactions; (j) the table of contents and headings contained in this Agreement are for reference purposes only and shall not affect in any way the meaning or interpretation of this Agreement; (k) bluebird and 2seventy have each participated in the negotiation and drafting of this Agreement and if an ambiguity or question of interpretation should arise, this Agreement shall be construed as if drafted jointly by the parties and no presumption or burden of proof shall arise favoring or burdening either party by virtue of the authorship of any of the provisions in this Agreement or any interim drafts of this Agreement; and (l) a reference to any Person includes such Person's successors and permitted assigns.

Section 14.18 No Duplication; No Double Recovery. Nothing in this Agreement, the Separation Agreement or any Ancillary Agreement is intended to confer to or impose upon any Party a duplicative right, entitlement, obligation or recovery with respect to any matter arising out of the same facts and circumstances.

Section 14.19 No Waiver. No failure to exercise and no delay in exercising, on the part of any Party, any right, remedy, power or privilege hereunder shall operate as a waiver hereof; nor shall any single or partial exercise of any right, remedy, power or privilege hereunder preclude any other or further exercise thereof or the exercise of any other right, remedy, power or privilege.

Section 14.20 Further Action. The Parties shall execute and deliver all documents, provide all information, and take or refrain from taking action as may be necessary or appropriate to achieve the purposes of this Agreement, including the execution and delivery to the other parties and their Affiliates and representatives of such powers of attorney or other authorizing documentation as is reasonably necessary or appropriate in connection with Tax Contests (or portions thereof) under the control of such other parties in accordance with Article IX.

[*Signature Page Follows*]

IN WITNESS WHEREOF, each Party has caused this Agreement to be executed on its behalf by a duly authorized officer on the date first set forth above.

BLUEBIRD BIO, INC.

By: /s/ Andrew Obenshain

Name: Andrew Obenshain

Title: President, Severe Genetic Diseases

2SEVENTY BIO, INC.

By: /s/ Nick Leschly

Name: Nick Leschly

Title: President

EMPLOYEE MATTERS AGREEMENT
by and between

BLUEBIRD BIO, INC.

and

2SEVENTY BIO, INC.

Dated as of November 3, 2021

EMPLOYEE MATTERS AGREEMENT
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EMPLOYEE MATTERS AGREEMENT

This EMPLOYEE MATTERS AGREEMENT (this "Agreement"), dated as of November 3, 2021, is entered into by and between bluebird bio, Inc. ("bluebird"), a Delaware corporation, and 2seventy bio, Inc. ("2seventy"), a Delaware corporation and a wholly owned Subsidiary of bluebird. "Party" or "Parties" means bluebird or 2seventy, individually or collectively, as the case may be.

W I T N E S S E T H:

WHEREAS, as contemplated by the Separation Agreement, bluebird and 2seventy desire to enter into this Agreement to provide for the allocation of Assets, Liabilities, and responsibilities with respect to certain matters relating to employees and other individual service providers (including employee compensation and benefit plans and programs) between them.

NOW, THEREFORE, in consideration of the foregoing and the mutual agreements, provisions and covenants contained in this Agreement, the Parties hereby agree as follows:

ARTICLE I
DEFINITIONS

Section 1.1 General. For purposes of this Agreement the following terms shall have the meaning ascribed to them in this Article I. Capitalized terms used and not defined herein shall have the meaning set forth in the Separation Agreement between the Parties, dated as of November 3, 2021 (the "Separation Agreement").

(1) "2seventy 401(k) Plan" means the tax-qualified defined contribution savings plan with a cash or deferred arrangement under Section 401(k) of the Code adopted by 2seventy or a 2seventy Group member in accordance with Section 3.1(a).

(2) "2seventy Common Stock" means the common stock, par value $0.0001 per share, of 2seventy.

(3) "2seventy Conversion Fraction" means a fraction, the numerator of which is the bluebird Pre-Distribution Stock Value and the denominator of which is the 2seventy Stock Value.

(4) "2seventy Distributed Stock Value" shall mean the product obtained by multiplying (x) the 2seventy Stock Value by (y) the Distribution Ratio.

(5) "2seventy Employee" means any individual who, as of the Distribution Effective Time, is either actively employed by or then on a leave of absence from 2seventy or a 2seventy Group member (including maternity, paternity, family, sick, disability leave, qualified military service under the Uniformed Services Employment and Reemployment Rights Act of 1994, and leave under the Family Medical Leave Act and other approved leaves) or who is employed by bluebird or a bluebird Group member and who becomes a 2seventy Employee pursuant to the operation of this Agreement.

(6) "2seventy ESPP" has the meaning set forth in Section 2.7.

(7) "2seventy FSAs" has the meaning set forth in Section 4.3.

(8) "2seventy Group" means (a) 2seventy and each entity that is a Subsidiary of 2seventy or will be a Subsidiary of 2seventy immediately following the Distribution Effective Time and (b) on and after the Distribution Effective Time, 2seventy and any entity that is a Subsidiary of 2seventy.

(9) "2seventy Health and Welfare Plans" has the meaning set forth in Section 4.1.

(10) "2seventy Participant" means any individual who is a 2seventy Employee or a Former 2seventy Employee, and any beneficiary, dependent, or alternate payee of such individual, as the context requires.

(11) "2seventy RSU" means a restricted stock unit that represents a general unsecured promise by 2seventy to deliver a share of 2seventy Common Stock, which restricted stock unit is granted as part of the adjustment to bluebird RSUs as set forth in Section 5.2(b).

(12) "2seventy Stock Plan" means the 2seventy 2021 Stock Option and Incentive Plan adopted by 2seventy prior to the Distribution Effective Time.

(13) "2seventy Stock Value" means the volume-weighted average trading price of 2seventy Common Stock on the five (5) trading days immediately following the date upon which the Distribution Effective Time occurs, as reported on Bloomberg.

(14) "2seventy Stock Value Ratio" means the quotient obtained by dividing (x) the bluebird Pre-Distribution Stock Value by (y) the sum of (1) the 2seventy Stock Value and (2) the quotient obtained by dividing (A) the bluebird Post-Distribution Stock Value by (B) the Distribution Ratio.

(15) "Action" means any demand, action, claim, suit, countersuit, arbitration, inquiry, subpoena, case, litigation, proceeding or investigation (whether civil, criminal, administrative or investigative) by or before any court or grand jury, any Governmental Entity or any arbitration or mediation tribunal.

(16) "Assets" means all rights, title and ownership interests in and to all rights, properties, claims, Contracts, businesses, or assets (including goodwill), wherever located (including in the possession of vendors or other third parties or elsewhere), of every kind, character and description, whether real, personal or mixed, tangible or intangible, whether accrued, contingent or otherwise, in each case, whether or not recorded or reflected on the books and records or financial statements of any Person. Except as otherwise specifically set forth herein, in the Separation Agreement or in the Tax Matters Agreement, the rights and obligations of the Parties with respect to Taxes shall be governed by the Tax Matters Agreement and, therefore, Taxes (including any Tax items, attributes or rights to receive any Tax Refunds (as defined in the Tax Matters Agreement)) shall not be treated as Assets governed by this Agreement.

(17) "bluebird 401(k) Plan" means the bluebird bio, Inc. 401(k) Savings Plan.

(18) "bluebird Common Stock" means the common stock, par value $0.01 per share, of bluebird.

(19) "bluebird Conversion Fraction" means a fraction, the numerator of which is the bluebird Pre-Distribution Stock Value and the denominator of which is the bluebird Post-Distribution Stock Value.

(20) "bluebird Employee" means any individual who, as of the Distribution Effective Time, is either receiving compensation from a member of the bluebird Group which is to be reported on IRS Form W-2 (in the case of individuals employed in the United States) or who is on the payroll of a bluebird Group member (in the case of individuals outside the United States), but does not include any 2seventy Employee.

(21) "bluebird ESPP" means the bluebird bio, Inc. 2013 Employee Stock Purchase Plan, as amended.

(22) "bluebird FSAs" has the meaning set forth in Section 4.3.

(23) "bluebird Group" means (a) prior to the Distribution Effective Time, bluebird and each entity that will be a Subsidiary of bluebird immediately following the Distribution Effective Time and (b) from and after the Distribution Effective Time, bluebird and each entity that is a Subsidiary of bluebird.

(24) "bluebird Health and Welfare Plans" means the health and welfare plans sponsored and maintained by bluebird or any bluebird Group member immediately prior to the Distribution Effective Time which provide group health, life, dental, accidental death and dismemberment, health care reimbursements, dependent care assistance and disability benefits.

(25) "bluebird Participant" means any individual who is a bluebird Employee or a Former bluebird Employee, and any beneficiary, dependent, or alternate payee of such individual, as the context requires.

(26) "bluebird Post-Distribution Stock Value" means the volume-weighted average trading price of bluebird Common Stock on the five (5) trading days immediately following the date upon which the Distribution Effective Time occurs, as reported on Bloomberg.

(27) "bluebird Pre-Distribution Stock Value" means the volume-weighted average trading price of bluebird Common Stock (trading "regular way") on the five (5) trading days immediately prior to the date upon which the Distribution Effective Time occurs, as reported on Bloomberg.

(28) "bluebird RSU" means a restricted stock unit that represents a general unsecured promise by bluebird to deliver a share of bluebird Common Stock.

(29) "bluebird Stock Plans" means the bluebird bio, Inc. 2010 Stock Option and Grant Plan, as amended, and the bluebird bio, Inc. 2013 Stock Option and Incentive Plan.

(30) "bluebird Stock Value Ratio" shall mean the quotient obtained by dividing (x) the bluebird Pre-Distribution Stock Value by (y) the sum of (1) the 2seventy Distributed Stock Value and (2) the bluebird Post-Distribution Stock Value.

(31) "COBRA" means the continuation coverage requirements for "group health plans" under Title X of the Consolidated Omnibus Budget Reconciliation Act of 1985, as amended, and as codified in Code Section 4980B and ERISA Sections 601 through 608.

(32) "Code" means the Internal Revenue Code of 1986, as amended, or any successor federal income tax law. Reference to a specific Code provision also includes any proposed, temporary, or final regulation in force under that provision.

(33) "Consents" means any consents, waivers, notices, reports or other filings to be obtained from or made, including with respect to any Contract, or any registrations, licenses, permits, authorizations to be obtained from, or approvals from, or notification requirements to, any Third Parties, including any Governmental Entity.

(34) "Dispute Notice" has the meaning set forth in Section 7.1.

(35) "Disputes" has the meaning set forth in Section 7.1.

(36) "Distribution Date" means the date, as shall be determined by the Board of Directors of bluebird, on which the Distribution occurs.

(37) "Distribution Effective Time" means 12:01 a.m. Eastern time on the Distribution Date.

(38) "ERISA" means the Employee Retirement Income Security Act of 1974, as amended. Reference to a specific provision of ERISA also includes any proposed, temporary, or final regulation in force under that provision.

(39) "Former 2seventy Employee" means any individual whose employment with either Party or any of its respective Subsidiaries and Affiliates terminated for any reason before the Distribution Effective Time, and who was primarily engaged in providing services to the Oncology Business as of the date of his or her termination of employment.

(40) "Former bluebird Employee" means any individual whose service relationship with a bluebird Group member terminated for any reason before the Distribution Effective Time, other than a Former 2seventy Employee.

(41) "Governmental Entity" means any nation or government, any state, municipality or other political subdivision thereof and any entity, body, agency, commission, department, board, bureau or court, whether domestic, foreign, multinational, or supranational exercising executive, legislative, judicial, regulatory, self-regulatory or administrative functions of or pertaining to government and any executive official thereof.

(42) "Group" means (a) with respect to bluebird, the bluebird Group and (b) with respect to 2seventy, the 2seventy Group, as the context requires.

(43) "HIPAA" means the health insurance portability and accountability requirements for "group health plans" under the Health Insurance Portability and Accountability Act of 1996, as amended.

(44) "Incentive Stock Option" means an option which qualifies as an incentive stock option under the provisions of Section 422 of the Code.

(45) "Liabilities" means any and all indebtedness, liabilities, costs, expenses, interest and obligations, whether accrued or fixed, absolute or contingent, matured or unmatured, known or unknown, reserved or unreserved, or determined or determinable, including those arising under any Law, Action, or in connection with any dispute, whether asserted or unasserted, or order, writ, judgment, injunction, decree, stipulation, determination or award entered by or with any Governmental Entity and those arising under any Contract or any fines, damages or equitable relief which may be imposed and including all costs and expenses related thereto. Except as otherwise specifically set forth herein, in the Separation Agreement or in the Tax Matters Agreement, the rights and obligations of the Parties with respect to Taxes shall be governed by the Tax Matters Agreement and, therefore, Taxes shall not be treated as Liabilities governed by this Agreement.

(46) "Option" when immediately preceded by "bluebird" means an outstanding option (either nonqualified or an Incentive Stock Option) to purchase bluebird Common Stock granted by bluebird prior to the Distribution Date pursuant to the bluebird Stock Plans and when immediately preceded by "2seventy" means an outstanding option (either nonqualified or an Incentive Stock Option) to purchase 2seventy Common Stock, which option is granted pursuant to the 2seventy Stock Plan as part of the adjustment to bluebird Options as set forth in Section 5.3(a).

(47) "Plan" when immediately preceded by "bluebird" means any plan, policy, program, payroll practice, on-going arrangement, contract, trust, insurance policy or other agreement or funding vehicle (including a bluebird Health and Welfare Plan) for which the eligible classes of participants include employees or former employees of bluebird or a bluebird Group member (which may include employees of 2seventy Group members prior to the Distribution Effective Time), and when immediately preceded by "2seventy," means any plan, policy, program, payroll practice, on-going arrangement, contract, trust, insurance policy or other agreement or funding vehicle (including a 2seventy Health and Welfare Plan) for which the eligible classes of participants are limited to employees or former employees (and their eligible dependents) of 2seventy or a 2seventy Group member, but no other bluebird Group member.

ARTICLE II
TRANSFER OF 2SEVENTY EMPLOYEES; GENERAL PRINCIPLES

Section 2.1 Transfer of Employment to 2seventy of Additional Employees; Post-Effective Time Transfers; Independent Contractors.

(a) Following the date hereof, bluebird and 2seventy may cause the employment of individuals designated by bluebird who are not employed by a 2seventy Group member as of the date hereof to be transferred to a 2seventy Group member within the time period(s) designated by bluebird.

(b) In the event that bluebird determines following the Distribution Effective Time that any individual employed outside the United States (other than an individual who the Parties intend to be a 2seventy Employee) has inadvertently become employed by a member of the 2seventy Group (due to the operation of transfer of undertakings or similar law or regulation), the Parties shall cooperate and take such actions as may be reasonably necessary in order to cause the employment of such individuals to be promptly transferred to a member of the bluebird Group.

(c) The Parties shall cooperate and take such actions as may be reasonably necessary in order to minimize potential statutory, contractual, plan-based or other severance or similar obligations to the Parties or their Affiliates in connection with any transfers of employment described in this Section 2.1.

(d) 2seventy will determine which, if any, temporary workers, individual consultants or independent contractors who are performing service primarily related to the Oncology Business, it wishes to transfer to 2seventy, and the Parties shall use reasonable efforts to transfer the individual or to assign the applicable Contract to a member of the 2seventy Group and 2seventy shall, or shall cause a member of the 2seventy Group to, assume and perform such Contract.

Section 2.2 Assumption and Retention of Liabilities. bluebird and 2seventy intend that employment-related Liabilities associated with bluebird Participants are to be retained or assumed by bluebird or a bluebird Group member (other than, for the avoidance of doubt, a 2seventy Group member), and employment-related Liabilities associated with 2seventy Participants are to be assumed by 2seventy or a 2seventy Group member, in each case, except as specifically set forth herein. Accordingly, as of the Distribution Effective Time:

(a) bluebird or the applicable member of the bluebird Group hereby retains or assumes and agrees to pay, perform, fulfill, and discharge, except as expressly provided in this Agreement, (i) all Liabilities arising under or related to bluebird Plans, (ii) all employment or service-related Liabilities with respect to (A) all bluebird Participants and (B) any individual who is, or was, an independent contractor, temporary employee, temporary service worker, consultant, freelancer, agency employee, leased employee, on-call worker, incidental worker, or non-payroll worker or in any other employment or similar relationship primarily connected to bluebird or a bluebird Group member and (iii) any Liabilities expressly transferred or allocated to bluebird or a bluebird Group member under this Agreement; and

(b) 2seventy hereby retains or assumes and agrees to pay, perform, fulfill, and discharge, except as expressly provided in this Agreement, (i) all Liabilities arising under or related to 2seventy Plans, (ii) all employment or service-related Liabilities with respect to (A) all 2seventy Participants and (B) any individual who is, or was, an independent contractor, temporary employee, temporary service worker, consultant, freelancer, agency employee, leased employee, on-call worker, incidental worker, or non-payroll worker or in any other employment or similar relationship primarily connected to 2seventy or a 2seventy Group member, including, without limitation, for both (A) and (B) hereof, any such Liabilities that may have arisen or that may be based upon events that occurred while such 2seventy Participant or other individual was employed by or otherwise provided services to bluebird or a bluebird Group member, and (iii)

any Liabilities expressly transferred or allocated to 2seventy or a 2seventy Group member under this Agreement.

Section 2.3 2seventy Participation in the bluebird Plans. Except as expressly provided in Article V of this Agreement, effective not later than the Distribution Effective Time, 2seventy and each 2seventy Group member shall cease to be a participating company in each bluebird Plan, and bluebird and 2seventy shall take all necessary action before the Distribution Effective Time to effectuate such cessation as a participating company.

Section 2.4 Sponsorship of the 2seventy Plans. Effective no later than immediately prior to the Distribution Effective Time, bluebird and 2seventy shall take such actions (if any) as are required to cause 2seventy or a 2seventy Group member to assume sole sponsorship of, and all Liabilities with respect to, each 2seventy Plan; provided that the parties shall agree prior to the Distribution Effective Time as to the treatment of any non-ERISA or voluntary Plans.

Section 2.5 No Duplication of Benefits; Service and Other Credit. bluebird and 2seventy shall adopt, or cause to be adopted, all reasonable and necessary amendments and procedures to prevent 2seventy Participants from receiving duplicative benefits from the bluebird Plans and the 2seventy Plans. With respect to 2seventy Employees, each 2seventy Plan shall provide that for purposes of determining eligibility to participate, vesting, and entitlement to benefits, service prior to the Distribution Effective Time with bluebird or a bluebird Group member shall be treated as service with 2seventy or the applicable 2seventy Group member. Such service also shall apply for purposes of satisfying any waiting periods, evidence of insurability requirements, or the application of any preexisting condition limitations under any 2seventy Plan. Each 2seventy Plan shall, to the extent practicable, waive pre-existing condition limitations with respect to 2seventy Employees. To the extent permitted under the applicable plan, 2seventy shall honor any deductibles incurred by 2seventy Employees and their eligible dependents under any bluebird medical plan in which they participated immediately prior to the Distribution Effective Time during the then-elapsed portion of the calendar year prior to the Distribution Effective Time for purposes of satisfying any deductibles or out-of-pocket maximums under the 2seventy Plans in which they are eligible to participate after the Distribution Effective Time in the same plan year in which such deductibles were incurred. For the avoidance of doubt, 2seventy shall not be required to honor any co-payments incurred by 2seventy Employees or their eligible dependents under any bluebird Health and Welfare Plan for purposes of satisfying any out-of-pocket maximums under the 2seventy Plans in which they are eligible to participate after the Distribution Effective Time.

Section 2.6 Reimbursements. From time to time after the Distribution Effective Time, the Parties shall reimburse one another, within sixty (60) days following reasonable request of the Party requesting reimbursement and the presentation by such Party of such substantiating documentation as the other Party shall reasonably request, for the cost of any Liabilities satisfied or assumed by the Party requesting reimbursement or its Affiliates that are made, pursuant to this Agreement, the responsibility of the other Party or any of its Affiliates.

Section 2.7 Approval of Plans. Prior to the Distribution Effective Time, bluebird shall have caused 2seventy to adopt the 2seventy Stock Plan and an employee stock purchase plan intended to meet the requirements of Section 423 of the Code and the regulations promulgated

thereunder (the "2seventy ESPP") and have taken all actions as may be necessary to approve the 2seventy Stock Plan and the 2seventy ESPP in order to satisfy the applicable requirements of the Code and the applicable rules and regulations of NASDAQ.

Section 2.8 Delivery of Shares; Registration Statement. From and after the Distribution Effective Time, bluebird shall have sole responsibility for delivery of shares of bluebird Common Stock pursuant to awards issued under a bluebird Plan in satisfaction of any obligations to deliver such shares under such bluebird Plan (including delivery to 2seventy Employees and Former 2seventy Employees) and shall do so without compensation from any 2seventy Group member. From and after the Distribution Effective Time, 2seventy shall have sole responsibility for delivery of shares of 2seventy Common Stock pursuant to awards issued under a 2seventy Plan in satisfaction of any obligations to deliver such shares under the 2seventy Plans (including delivery to bluebird Employees and Former bluebird Employees) and shall do so without compensation from any bluebird Group member. 2seventy shall cause a registration statement on Form S-8 (or other appropriate form) to be filed with respect to such issued or issuable shares prior to the Distribution Effective Time and shall use commercially reasonable efforts to cause such registration statement to remain in effect for so long as there may be an obligation to deliver 2seventy shares under such 2seventy Plans. bluebird shall use commercially reasonable efforts (i) to assist 2seventy in completing such registration and (ii) to cause a registration statement on Form S-8 (or other appropriate form) of bluebird to remain in effect for so long as there may be an obligation to deliver bluebird shares under any bluebird Plans.

Section 2.9 No Change in Control. bluebird and 2seventy each hereby agree that none of the transactions contemplated by the Separation Agreement or any of the Ancillary Agreements, including this Agreement, constitutes a "change in control," "change of control," "sale event," or transaction having a similar name, as applicable, within the meaning of any bluebird Plan or 2seventy Plan.

Section 2.10 Labor Relations. To the extent required by applicable Law, the Parties shall cooperate to provide notice, engage in consultation and take any similar action which may be required on its part in connection with the Separation. The Parties hereby agree that they are not aware of any applicable labor union, work council or similar employee organization that would require notice in connection with the Separation.

ARTICLE III
DEFINED CONTRIBUTION AND NON-QUALIFIED DEFERRED COMPENSATION PLANS

Section 3.1 401(k) Plan.

(a) *Establishment of Plan and Trust*. Effective November 1, 2021, bluebird shall cause 2seventy or a 2seventy Group member to adopt the 2seventy 401(k) Plan, which shall be substantially similar in all material respects to the bluebird 401(k) Plan, and any trust agreements, other plan documents, summary plan descriptions, notices and enrollment materials reasonably necessary to implement the 2seventy 401(k) Plan, and shall cause trustees to be appointed for such plan. Each 2seventy Employee who was eligible to participate in the bluebird

401(k) Plan immediately prior to the effective date of the 2seventy 401(k) Plan (or prior to the Distribution Effective Time, if later) shall be eligible to participate in the 2seventy 401(k) Plan as of its effective date, and the participation of each 2seventy Employee in the bluebird 401(k) Plan shall cease as of such date. All other 2seventy Employees shall become eligible to participate in the 2seventy 401(k) Plan as provided under the terms of such plan.

(b) *Assumption of Liabilities and Transfer of Assets*. In accordance with applicable Law, bluebird and 2seventy shall cause, in the manner described herein, the accounts under the bluebird 401(k) Plan of each 2seventy Employee to be transferred to the 2seventy 401(k) Plan on, or as soon as practicable after, the effective date of the 2seventy 401(k) Plan. On, or as soon as practicable after, the effective date of the 2seventy 401(k) Plan: (i) bluebird shall cause the accounts (including any outstanding loan balances) of each 2seventy Employee in the bluebird 401(k) Plan to be transferred from the trust established under the bluebird 401(k) Plan to the trust established under the 2seventy 401(k) Plan; (ii) the 2seventy 401(k) Plan shall assume and be solely responsible for all Liabilities under the 2seventy 401(k) Plan relating to the accounts that are so transferred as of the time of such transfer; and (iii) 2seventy shall cause such transferred accounts to be accepted by the 2seventy 401(k) Plan and its related trust and shall cause the 2seventy 401(k) Plan to satisfy all protected benefit requirements under Section 411(d)(6) of the Code and applicable Law with respect to the transferred accounts.

(c) *Severance from Employment*. Participants in the bluebird 401(k) Plan will not be treated as having experienced a severance from employment, within the meaning of Section 401(k)(2)(B)(i) of the Code, for purposes of such plans as a result of the Separation or the occurrence of the Distribution Effective Time.

(d) *Post-Distribution Effective Time Contributions*. If any 2seventy Employees are entitled to employer matching contributions under the terms of the bluebird 401(k) Plan (or any other employer contributions under such plan) with respect to contributions made by 2seventy Employees into the bluebird 401(k) Plan in the 2021 plan year prior to becoming a 2seventy Employee, and such employer matching contributions have not yet been deposited into the 2seventy Employees' accounts under the bluebird 401(k) Plan as of the date such accounts are transferred from the trust established under the bluebird 401(k) Plan to the trust established under the 2seventy 401(k) Plan as set forth in Section 3.1(b), then bluebird and 2seventy shall cooperate to make such amendments, if any, to the bluebird 410(k) Plan and/or the 2seventy 401(k) Plan and/or to take such other actions as may be necessary or appropriate to ensure that the 2seventy Employees are given the full economic benefit of such employer matching contributions as soon as practicable following the determination of such employer matching contribution (and other employer contribution, if any) amounts. If the employer matching contribution (and other employer contributions, if any) is made to the bluebird 401(k) Plan, bluebird shall then cause the amount of such employer matching contributions (and other employer contributions, if any) to be transferred to the 2seventy 401(k) Plan in the manner set forth in Section 3.1(b) as soon as practicable following their deposit into the bluebird 401(k) Plan, and 2seventy shall cause such transferred amounts to be accepted by the 2seventy 401(k) Plan. For the avoidance of doubt, it is the intention of the parties hereto that the cost of the employer matching contribution (and other employer contributions, if any) described herein be borne by bluebird.

ARTICLE IV
HEALTH AND WELFARE PLANS; PAYROLL; COBRA AND VACATION

Section 4.1 Cessation of Participation in bluebird Health and Welfare Plans. Prior to the Distribution Effective Time, 2seventy shall establish health and welfare plans (the "2seventy Health and Welfare Plans") which generally correspond to the bluebird Health and Welfare Plans in which 2seventy Employees participate immediately prior to the Distribution Effective Time. Effective January 1, 2022, 2seventy Employees who were participating in the bluebird Health and Welfare Plans as of December 31, 2021 shall cease to participate in the bluebird Health and Welfare Plans and shall, as applicable, commence participation in the corresponding 2seventy Health and Welfare Plan in which they have enrolled. 2seventy shall cause 2seventy Employees and their covered dependents who participate in bluebird Health and Welfare Plans as of December 31, 2021 to be eligible to enroll as of January 1, 2022 in such 2seventy Health and Welfare Plans as are made available to the 2seventy Employee. The transfer of employment from bluebird or a bluebird Group member to 2seventy or a 2seventy Group member prior to or as of the Distribution Effective Time shall not be treated as a "qualifying event" with respect to any 2seventy Employee under the bluebird Health and Welfare Plans or the 2seventy Health and Welfare Plans.

Section 4.2 Allocation of Health and Welfare Plan Liabilities. All outstanding Liabilities relating to, arising out of, or resulting from health and welfare coverage or claims incurred by or on behalf of 2seventy Employees or their covered dependents under the bluebird Health and Welfare Plans on or before the Distribution Effective Time shall be retained by bluebird. Any Liabilities relating to, arising out of, or resulting from health and welfare coverage or claims incurred by or on behalf of 2seventy Employees or their covered dependents under the bluebird Health and Welfare Plans following the Distribution Effective Time shall be assumed by 2seventy; provided, however, that to the extent such a Liability is covered under an insurance policy maintained with respect to a bluebird Health and Welfare Plan regardless of when the Liability arises, and such Liability is not covered under an insurance policy maintained with respect to a 2seventy Health and Welfare Plan, such Liability shall be retained by bluebird to the extent of such coverage; and provided further, however, that to the extent that bluebird receives prior to the Distribution Effective Time an invoice from a service provider billing bluebird for a service or product relating to health or welfare coverage for 2seventy Employees or their covered dependents following the Distribution Effective Time, bluebird shall be responsible for paying such invoice and 2seventy shall reimburse bluebird for any amount paid by bluebird. For the avoidance of doubt, the working rates will be used for reimbursement for the self-insured dental. For purposes of this Agreement, a claim shall be incurred upon the date upon which service or product giving rise to the Liability was provided. Any payments, repayments, reimbursements or credits consisting of, or representing, dividends, demutualizations, premium refunds, rebates, subrogation or similar reimbursements, overpayments, class action recoveries, or like payments under, or relating to, any bluebird Health or Welfare Plan whenever occurring shall remain the property solely of bluebird and neither 2seventy, any 2seventy Group member nor any 2seventy Participant shall have any interest in or right to such bluebird property.

Section 4.3 Flexible Spending Plan Treatment. Effective as of January 1, 2022, 2seventy shall establish a dependent care spending account and a medical care spending account

(the "2seventy FSAs"), which 2seventy FSAs shall have terms that are substantially identical to the analogous bluebird dependent care and medical care flexible spending accounts (the "bluebird FSAs") as in effect immediately prior to the Distribution Effective Time. 2seventy shall take all steps necessary or appropriate to allow each such 2seventy Employee to make a new election under the 2seventy FSAs effective as of January 1, 2022.

Section 4.4 Workers' Compensation Liabilities. All workers' compensation Liabilities relating to, arising out of, or resulting from any claim by 2seventy Employees or Former 2seventy Employees that result from an accident or from an occupational disease which is incurred or becomes manifest, as the case may be, on or before the Distribution Effective Time and while such individual was employed by bluebird or a bluebird Group member shall be retained by bluebird. Any workers' compensation Liabilities relating to, arising out of, or resulting from any claim by 2seventy Employees or Former 2seventy Employees that result from an accident or from an occupational disease which is incurred or becomes manifest, as the case may be, following the Distribution Effective Time shall be assumed by 2seventy; provided, however, that to the extent such a Liability is covered under a workers compensation insurance policy of bluebird or a bluebird Group member regardless of when the Liability arises, and such Liability is not covered under a workers compensation insurance policy of 2seventy or a 2seventy Group member, such Liability shall be retained by bluebird or a bluebird Group member to the extent of such coverage; and provided further, however, that to the extent that bluebird or a bluebird Group member, as applicable, receives prior to the Distribution Effective Time an invoice for a covered expense with respect to such Liability, bluebird shall be responsible for paying such invoice and 2seventy shall reimburse bluebird for any amount paid by bluebird. Notwithstanding the foregoing, 2seventy shall assume worker's compensation Liabilities to the extent they are imposed on 2seventy under applicable Law or where the injury or illness related to the Liability is aggravated or subject to further injury after the Distribution Effective Time. A Liability which must be paid due to the existence of a deductible shall not be deemed to be covered by a workers compensation insurance policy for purposes of this Section 4.4. Subject to the foregoing, 2seventy and each 2seventy Group member shall also be solely responsible for all workers' compensation Liabilities relating to, arising out of, or resulting from any claim incurred for a compensable injury sustained by a 2seventy Employee that results from an accident or from an occupational disease which is incurred or becomes manifest, as the case may be, after the Distribution Effective Time. bluebird, each bluebird Group member, 2seventy and each 2seventy Group member shall cooperate with respect to processing of claims, any notification to appropriate governmental agencies of the disposition and the issuance of new, or the transfer of existing, workers' compensation insurance policies and claims handling contracts.

Section 4.5 Payroll Taxes and Reporting. bluebird and 2seventy (i) shall, to the extent practicable, treat 2seventy (or a 2seventy Group member designated by 2seventy) as a "successor employer" and bluebird (or the appropriate bluebird Group member) as a "predecessor," within the meaning of Sections 3121(a)(1) and 3306(b)(1) of the Code, with respect to 2seventy Employees for purposes of taxes imposed under the United States Federal Unemployment Tax Act or the United States Federal Insurance Contributions Act, and (ii) hereby agree to use commercially reasonable efforts to implement the standard procedure described in Section 4 of Revenue Procedure 2004-53. Without limiting in any manner the obligations and Liabilities of the Parties under the Tax Matters Agreement, including all withholding obligations otherwise set

forth therein, bluebird, each bluebird Group member, 2seventy and each 2seventy Group member shall each bear its responsibility for payroll tax obligations and for the proper reporting to the appropriate governmental authorities of compensation earned by their respective employees after the Distribution Effective Time, including compensation related to the exercise of stock options or the vesting or exercise of other equity awards, including in instances where such equity awards are with respect to the equity of the other Party.

Section 4.6 COBRA and HIPAA Compliance. bluebird or a bluebird Group member shall retain the responsibility for administering compliance with the health care continuation requirements of COBRA for any COBRA qualified beneficiaries who incur a COBRA qualifying event or loss of coverage under the bluebird Health and Welfare Plans at any time before January 1, 2022. 2seventy shall be responsible for administering compliance with the health care continuation requirements of COBRA, and the corresponding provisions of the 2seventy Health and Welfare Plans with respect to 2seventy Participants who incur a COBRA qualifying event or loss of coverage under the 2seventy Health and Welfare Plans at any time upon or after November 1, 2021. For the avoidance of doubt, COBRA costs will be invoiced monthly to 2seventy during the transition period, and 2seventy shall be responsible for the cost and administration of COBRA for any 2seventy Employees who are not eligible for the 2seventy Health and Welfare Plans in 2022 while continuing COBRA coverage.

Section 4.7 Vacation and Paid Time Off. As of the Distribution Effective Time, the applicable 2seventy Group member shall credit each 2seventy Employee with the vacation, holiday, annual leave, and/or other leave (as applicable) that such individual has accrued immediately prior to the Distribution Effective Time and shall provide each such individual with a reasonable opportunity to use such leave in accordance with the vacation and personnel policies applicable to such employee immediately prior to the Distribution Effective Time; provided that, with respect to 2seventy Employees located in California or Rhode Island, such employee shall have consented in writing, by signing the offer letter and accompanying consent form, to such transfer of vacation, holiday, annual leave and/or other leave (as applicable).

ARTICLE V
INCENTIVE COMPENSATION, EQUITY COMPENSATION AND OTHER BENEFITS

Section 5.1 Annual Cash-Based Incentive Plans. As of the Distribution Effective Time, 2seventy shall assume the obligation, if any, to pay each 2seventy Employee who is participating in an annual cash incentive bonus program in respect of 2021 performance (whether payable in fiscal year 2021 or fiscal year 2022) of bluebird or a bluebird Group member such 2seventy Employee's incentive bonus under such plan, based upon the amount accrued by bluebird in respect of such obligations. 2seventy shall cause such payments to be made to the applicable 2seventy Employees at the time such payments are made under the corresponding bluebird incentive bonus program.

Section 5.2 Retention Bonus Plans. As of the Distribution Effective Time, 2seventy shall assume the obligation, if any, to pay each 2seventy Employee who is participating in a retention bonus plan of bluebird or a bluebird Group member such 2seventy Employee's retention bonus under such plan, subject to the satisfaction of the conditions for payment of such retention bonus by the applicable 2seventy Employee. 2seventy shall cause such payments to be

made to the applicable 2seventy Employees at the time such payments are made under the corresponding bluebird retention bonus plan. bluebird shall retain the obligation, if any, to pay each bluebird Employee who is participating in a retention bonus plan of bluebird or a bluebird Group member such bluebird Employee's retention bonus under such plan, subject to the satisfaction of the conditions for payment of such retention bonus by the applicable bluebird Employee.

Section 5.3 Awards under the bluebird Stock Plans. bluebird and, where applicable, 2seventy, shall take all actions necessary or appropriate so that each bluebird Option and bluebird RSU outstanding immediately prior to the Distribution Effective Time shall be adjusted as set forth in this Section 5.3.

(a) bluebird Options.

(i) bluebird Options Granted Prior to 2021 Other than bluebird Options held by Former bluebird Employees or Former 2seventy Employees. Upon the Distribution Effective Time, each vested and unvested bluebird Option with a grant date prior to January 1, 2021, whether held by a bluebird Participant or a 2seventy Participant other than a bluebird Option held by a Former bluebird Employee or a Former 2seventy Employee, will be equitably adjusted in accordance with the Distribution (such adjustments to be done in a manner consistent with the requirements of Section 409A of the Code and, for Incentive Stock Options, Section 424 of the Code), such that each bluebird Participant or 2seventy Participant who holds such bluebird Options shall, upon the Distribution Effective Time, hold bluebird Options and 2seventy Options as follows:

(A) The number of shares of bluebird Common Stock subject to the adjusted bluebird Option will be equal to the number of shares of bluebird Common Stock subject to the option immediately prior to the Distribution Effective Time multiplied by the bluebird Stock Value Ratio, with the result being rounded down to the nearest whole share. The per share exercise price of the adjusted bluebird Option will be equal to the per share exercise price of the original bluebird Option divided by the bluebird Conversion Fraction, with the result being rounded up to the nearest whole cent. Each adjusted bluebird Option shall be subject to the same terms and conditions regarding type (whether an Incentive Stock Option or a nonqualified Option), term, vesting, and other provisions regarding exercise as set forth in the original bluebird Option (including, for the avoidance of doubt, that a 2seventy Participant will not be deemed to have experienced a termination of employment for purposes of any post-termination exercise provisions applicable to such adjusted bluebird Option so long as he or she remains in continued employment with 2seventy).

(B) The number of shares of 2seventy Common Stock subject to the 2seventy Option will be equal to the number of shares of bluebird Common Stock subject to the option immediately prior to the Distribution Effective Time multiplied by the 2seventy Stock Value Ratio, with the

result being rounded down to the nearest whole share. The per share exercise price of the 2seventy Option will be equal to the per share exercise price of the original bluebird Option divided by the 2seventy Conversion Fraction, with the result being rounded up to the nearest whole cent. Each 2seventy Option shall be subject to the same terms and conditions regarding type (whether an Incentive Stock Option or a nonqualified Option), term, vesting, and other provisions regarding exercise as set forth in the original bluebird Option (including, for the avoidance of doubt, that a bluebird Participant will not be deemed to have experienced a termination of employment for purposes of any post-termination exercise provisions applicable to such 2seventy Option so long as he or she remains in continued employment with bluebird).

(ii) bluebird Options Granted in 2021 held by bluebird Participants and bluebird Options held by Former bluebird Employees or Former 2seventy Employees. Upon the Distribution Effective Time, each vested and unvested bluebird Option with a grant date on or after January 1, 2021 held by a bluebird Participant and each vested and unvested bluebird Option held by a Former bluebird Employee or a Former 2seventy Employee (whenever granted) will be equitably adjusted solely into an adjusted bluebird Option. The number of shares of bluebird Common Stock subject to the adjusted bluebird Option will be equal to the number of shares of bluebird Common Stock subject to the option immediately prior to the Distribution Effective Time multiplied by the bluebird Conversion Fraction, with the result being rounded down to the nearest whole share. The per share exercise price of the adjusted bluebird Option will be equal to the per share exercise price of the original bluebird Option divided by the bluebird Conversion Fraction, with the result being rounded up to the nearest whole cent. Each adjusted bluebird Option shall be subject to the same terms and conditions regarding type (whether an Incentive Stock Option or a nonqualified Option), term, vesting, and other provisions regarding exercise as set forth in the original bluebird Option. Such adjustments shall be done in a manner consistent with the requirements of Section 409A of the Code and, for Incentive Stock Options, Section 424 of the Code.

(iii) bluebird Options Granted in 2021 held by 2seventy Participants other than Former 2seventy Employees. Upon the Distribution Effective Time, each vested and unvested bluebird Option with a grant date on or after January 1, 2021 held by a 2seventy Participant other than a bluebird Option held by a Former 2seventy Employee will be converted into a 2seventy Option. The number of shares of 2seventy Common Stock subject to the 2seventy Option will be equal to the number of shares of bluebird Common Stock subject to the option immediately prior to the Distribution Effective Time multiplied by the 2seventy Conversion Fraction, with the result being rounded down to the nearest whole share. The per share exercise price of the 2seventy Option will be equal to the per share exercise price of the original bluebird Option divided by the 2seventy Conversion Fraction, with the result being rounded up to the nearest whole cent. Each unvested 2seventy Option shall be subject to the same terms and conditions regarding type (whether an Incentive Stock Option or a nonqualified Option), term, vesting (including, for the avoidance of doubt, that each such 2seventy Participant will receive service credit for purposes of vesting for periods of employment with bluebird

prior to the Distribution Effective Time), and other provisions regarding exercise as set forth in the original bluebird Option. Such adjustments shall be done in a manner consistent with the requirements of Section 409A of the Code and, for Incentive Stock Options, Section 424 of the Code.

(b) bluebird RSUs.

(i) bluebird RSUs Granted Prior to 2021. Upon the Distribution Effective Time, each bluebird RSU with a grant date prior to January 1, 2021, whether held by a bluebird Participant or a 2seventy Participant, will be equitably adjusted in accordance with the Distribution (with such adjustments to be done in a manner consistent with the requirements of Section 409A of the Code), such that each bluebird Participant or 2seventy Participant who holds such bluebird RSUs shall, upon the Distribution Effective Time, hold bluebird RSUs and 2seventy RSUs as follows:

(A) The number of shares of bluebird Common Stock subject to the adjusted bluebird RSU will be equal to the number of shares of bluebird Common Stock subject to the bluebird RSU immediately prior to the Distribution Effective Time multiplied by the bluebird Stock Value Ratio, with the result being rounded down to the nearest whole share. Each adjusted bluebird RSU shall be subject to the same terms and conditions regarding term, vesting, and other provisions regarding settlement as set forth in the original bluebird RSU (including, for the avoidance of doubt, that a 2seventy Participant will not be deemed to have experienced a termination of employment for so long as he or she remains in continued employment with 2seventy).

(B) The number of shares of 2seventy Common Stock subject to the 2seventy RSU will be equal to the number of shares of bluebird Common Stock subject to the bluebird RSU immediately prior to the Distribution Effective Time multiplied by the 2seventy Stock Value Ratio, with the result being rounded down to the nearest whole share. Each 2seventy RSU shall be subject to the same terms and conditions regarding term, vesting, and other provisions regarding settlement as set forth in the original bluebird RSU (including, for the avoidance of doubt, that a bluebird Participant will not be deemed to have experienced a termination of employment for so long as he or she remains in continued employment with bluebird).

(ii) bluebird RSUs Granted in 2021 held by bluebird Participants. Upon the Distribution Effective Time, each bluebird RSU with a grant date on or after January 1, 2021 held by a bluebird Participant will be equitably adjusted solely into an adjusted bluebird RSU. The number of shares of bluebird Common Stock subject to the adjusted bluebird RSU will be equal to the number of shares of bluebird Common Stock subject to the bluebird RSU immediately prior to the Distribution Effective Time multiplied by the bluebird Conversion Fraction, with the result being rounded down to the nearest whole share. Each adjusted bluebird RSU shall be subject to the same terms

and conditions regarding term, vesting, and other provisions regarding settlement as set forth in the original bluebird RSU award. Such adjustments shall be done in a manner consistent with requirements of Section 409A of the Code.

(iii) bluebird RSUs Granted in 2021 held by 2seventy Participants. Upon the Distribution Effective Time, each bluebird RSU with a grant date on or after January 1, 2021 held by a 2seventy Participant will be equitably adjusted solely into a 2seventy RSU. The number of shares of 2seventy Common Stock subject to the 2seventy RSU will be equal to the number of shares of bluebird Common Stock subject to the bluebird RSU immediately prior to the Distribution Effective Time multiplied by the 2seventy Conversion Fraction, with the result being rounded down to the nearest whole share. Except as set forth on Schedule 5.3 of this Agreement, each 2seventy RSU shall be subject to the same terms and conditions regarding term, vesting (including, for the avoidance of doubt, that each 2seventy Participant will receive service credit for purposes of vesting for periods of employment with bluebird prior to the Distribution Effective Time), and other provisions regarding settlement as set forth in the original bluebird RSU award. Such adjustments shall be done in a manner consistent with the requirements of Section 409A of the Code.

(c) Delivery; Withholding.

(i) Delivery. 2seventy shall be solely responsible for the issuance of 2seventy Common Stock in respect of the grant, exercise and/or vesting of 2seventy Options and 2seventy RSUs (regardless of the holder thereof). bluebird shall be solely responsible for the issuance of bluebird Common Stock in respect of the grant, exercise, and/or vesting of bluebird Options and bluebird RSUs (regardless of the holder thereof).

(ii) Withholding and Reporting. Following the Distribution Effective Time, (i) 2seventy shall be solely responsible for all income, payroll and other tax remittance and reporting related to the compensation of 2seventy Participants in respect of 2seventy Options and 2seventy RSUs and bluebird Options and bluebird RSUs and (ii) bluebird shall be solely responsible for all income, payroll and other tax remittance and reporting related to the compensation of bluebird Participants in respect of 2seventy Options and 2seventy RSUs and bluebird Options and bluebird RSUs. The Parties will cooperate and communicate with each other and with third-party providers to effectuate the withholding and remittance of any such Taxes, as well as any required tax reporting, in a timely, efficient and appropriate manner. To the maximum extent permitted under applicable Law, bluebird and 2seventy shall share, and shall cause each member of its respective Group to share, with each other and their respective agents and vendors all information reasonably necessary for the efficient and accurate administration of the bluebird Stock Plans and the 2seventy Stock Plan, including, but not limited to, information regarding terminations of employment and the attainment of any specified performance criteria set forth in any awards of bluebird or 2seventy Options or RSUs.

(d) Partial Interests in Shares. To the extent that any adjustment described in this Section 5.3 results in any fractional interest in shares, such fractional interest shall be rounded down to the nearest whole share.

(e) Administration. Each of bluebird and 2seventy shall establish an appropriate administration system (through Solium Shareworks and American Stock Transfer (AST) in order to handle exercises and delivery of shares in an orderly manner and provide reasonable levels of service for equity award holders. Upon the Distribution Effective Time, 2seventy shall succeed to all administrative and interpretive and other rights of bluebird with respect to awards converted into awards with respect to 2seventy Common Stock hereunder. Each of bluebird and 2seventy agree that it shall engage Solium Shareworks as its stock plan administrator until the date on which all 2seventy Options and RSUs held by bluebird Participants and all bluebird Options and RSUs held by 2seventy Participants have vested (or, with respect to Options, vested and been exercised), expired, terminated or been forfeited or cancelled. Notwithstanding the foregoing sentence, bluebird or 2seventy may engage a stock plan administrator other than Solium Shareworks with the written consent of the other party.

(f) No Effect on Subsequent Awards. The provisions of this Section 5.3 shall have no effect on the terms and conditions of equity and equity-based awards granted following the Distribution Date by bluebird or 2seventy.

(g) No Termination of Employment or Service. Holders of equity or equity-based awards described in this Section 5.3 will not be treated as having experienced a termination of employment or service for purposes of such awards as a result of the Separation or the occurrence of the Distribution Effective Time.

Section 5.4 bluebird ESPP. As of the Distribution Effective Time, the participation of 2seventy Employees in the bluebird ESPP, if any, shall terminate and, as soon as practicable following the Distribution Date, the 2seventy Employees shall receive a lump sum amount in respect of their payroll deductions not previously used to purchase bluebird Common Stock in accordance with the terms of the bluebird ESPP.

Section 5.5 Blackout Period.

(a) During the period beginning as of the date that 2seventy Common Stock begins trading on a "when-issued" basis on NASDAQ and ending as of the date that is four (4) weeks following the Distribution Date (the "Blackout Period"), no bluebird Participant or 2seventy Participant who holds vested bluebird Options or vested 2seventy Options may exercise such Options, and no bluebird Participant or 2seventy Participant who holds vested bluebird RSUs or vested 2seventy RSUs may sell the bluebird Common Stock or 2seventy Common Stock issued upon the settlement of such bluebird RSUs or 2seventy RSUs other than shares sold to cover tax withholding obligations.

(b) If the employment of a bluebird Employee or a 2seventy Employee is terminated during the Blackout Period, and the entity employing such individual (the "Employing Entity") determines to extend the period of exercisability applicable to stock options held by such bluebird Employee or 2seventy Employee, the entity that does not employ such individual (the "Non-Employing Entity") may also elect to extend the period of exercisability applicable to any stock options held by such individual in the Non-Employing Entity; provided, however, that the Non-Employing Entity shall not be required to extend the period of exercisability for such stock options for any period longer than is necessary to provide such

individual the opportunity to exercise his or her stock options in the Non-Employing Entity for the period of time provided in the applicable award agreement.

Section 5.6 Section 409A. The Parties agree that their intent is that all payments and benefits under this Agreement will comply with or be exempt from Section 409A of the Code to the extent applicable. This Agreement shall be interpreted such that all such payments and benefits either comply with or are exempt from Section 409A of the Code, and all provisions of this Agreement shall be construed in a manner consistent with the requirements for avoiding taxes or penalties under Section 409A of the Code. Notwithstanding anything in this Agreement to the contrary, bluebird and 2seventy agree to negotiate in good faith regarding the need for any treatment of any payments or benefits hereunder different from that otherwise provided herein to ensure that the treatment of bluebird or 2seventy Options, RSUs or other compensation hereunder does not cause the imposition of a tax under Section 409A of the Code.

ARTICLE VI
GENERAL AND ADMINISTRATIVE

Section 6.1 Sharing of Participant Information. To the maximum extent permitted under applicable Law, bluebird and 2seventy shall share, and shall cause each member of its respective Group to share, with each other and their respective agents and vendors all participant information reasonably necessary for the efficient and accurate administration of each of the bluebird Plans and the 2seventy Plans. bluebird and 2seventy and their respective authorized agents shall, subject to applicable Laws regarding confidentiality and privacy, be given reasonable and timely access to, and may make copies of, all information relating to the subjects of this Agreement in the custody of the other Party, to the extent necessary for such administration. Without limiting the foregoing, and subject to applicable Law, bluebird shall transfer to 2seventy any and all employment records and information (including, but not limited to, any Form I-9, Form W-2 or other Internal Revenue Service forms) with respect to 2seventy Employees and other records reasonably required by 2seventy to enable 2seventy properly to carry out its obligations under this Agreement. Such transfer of records and information generally shall occur as soon as administratively practicable on or after the Distribution Effective Time. Each Party will permit the other Party reasonable access to employee records and information, to the extent reasonably necessary for such accessing Party to carry out its obligations hereunder (subject to applicable Law).

Section 6.2 Cooperation. The Parties agree to reasonably cooperate to effect the terms and conditions of this Agreement, from and after the date hereof.

Section 6.3 No Third Party Rights or Entitlements. No provision of this Agreement or the Separation Agreement shall be construed to create any right, or accelerate entitlement, to any compensation or benefit whatsoever on the part of any future, present, or former employee of bluebird, a bluebird Group member, 2seventy, or a 2seventy Group member under this Agreement, the Separation Agreement, any bluebird Plan or 2seventy Plan or otherwise. Except as expressly provided in this Agreement, nothing in this Agreement shall preclude 2seventy or any 2seventy Group member, at any time after the Distribution Effective Time, from amending, merging, modifying, terminating, eliminating, reducing, or otherwise altering in any respect any 2seventy Plan, any benefit under any 2seventy Plan or any trust, insurance policy or funding

vehicle related to any 2seventy Plan; and except as expressly provided in this Agreement, nothing in this Agreement shall preclude bluebird or any bluebird Group member, at any time after the Distribution Effective Time, from amending, merging, modifying, terminating, eliminating, reducing, or otherwise altering in any respect any bluebird Plan, any benefit under any bluebird Plan or any trust, insurance policy or funding vehicle related to any bluebird Plan.

Section 6.4 Audit Rights with Respect to Information Provided. Each of bluebird and 2seventy, and their duly authorized representatives, shall have the right to conduct reasonable audits with respect to all information provided to it by the other Party pursuant to this Agreement. The Parties shall cooperate to determine the procedures and guidelines for conducting audits under this Section 6.4, which shall require reasonable advance notice by the auditing Party. The auditing Party shall have the right to make copies of any relevant records at its expense, subject to applicable Law. Failure of a third party service provider to provide information shall not constitute a breach of this Section 6.4; provided that the applicable Party has timely requested the information from such service provider.

Section 6.5 Fiduciary Matters. bluebird and 2seventy each acknowledge that actions required to be taken pursuant to this Agreement may be subject to fiduciary duties or standards of conduct under ERISA or other applicable Law, and no Party shall be deemed to be in violation of this Agreement if it fails to comply with any provisions hereof based upon its good faith determination (as supported by advice from counsel experienced in such matters) that to do so would violate such a fiduciary duty or standard. Each Party shall be responsible for taking such actions as are deemed necessary and appropriate to comply with its own fiduciary responsibilities and shall fully release and indemnify the other Party for any Liabilities caused by the failure to satisfy any such responsibility.

Section 6.6 Consent of Third Parties. If any provision of this Agreement is dependent on the consent of any third party (such as a vendor or Governmental Entity), bluebird and 2seventy shall use commercially reasonable efforts to obtain such consent, and if such consent is not obtained, to implement the applicable provisions of this Agreement to the full extent practicable. If any provision of this Agreement cannot be implemented due to the failure of such third party to consent, bluebird and 2seventy shall negotiate in good faith to implement the provision in a mutually satisfactory manner. The phrase “commercially reasonable efforts” as used herein shall not be construed to require the incurrence of any non-routine or unreasonable expense or liability or the waiver of any right.

Section 6.7 Assignment of “Claw-Back” or Recoupment Rights. To the extent a member of the bluebird Group holds any repayment “claw-back” or recoupment rights with respect to remuneration paid or provided to 2seventy Employees (e.g., the right to require repayment of compensation upon a termination of employment or misconduct by the employee) in connection with any relocation benefit, sign-on bonus, tuition benefit or otherwise, such rights are hereby assigned to 2seventy upon the Distribution Effective Time, it being agreed that the transactions contemplated by the Separation Agreement shall not, in and of themselves, trigger any such repayment or recoupment right. The Parties shall cooperate to execute any further documentation as may be necessary to evidence such assignment.

Section 6.8 Proprietary Information and Inventions Agreements. Effective as of the Distribution Effective Time, bluebird shall, or shall cause the appropriate member of the bluebird Group to, waive such rights under any proprietary information, confidentiality, inventions, restrictive covenant or similar agreement between any 2seventy Employee and any bluebird Group member as 2seventy determines, and bluebird agrees, in their reasonable discretion to be necessary or appropriate to permit such 2seventy Employee to perform his or her services to 2seventy or a 2seventy Group member from and after the Distribution Effective Time.

ARTICLE VII
DISPUTE RESOLUTION

Section 7.1 Negotiation. A Party seeking resolution of a controversy, dispute or Action arising out of, in connection with, or in relation to the interpretation, performance, nonperformance, validity or breach of this Agreement or otherwise arising out of, or in any way related to, this Agreement or the transaction contemplated hereby, including any Action based on contract, tort, statute or constitution (collectively, "Disputes"), shall provide written notice of such Dispute to the other Party, specifying the terms of such Dispute in reasonable detail ("Dispute Notice"). The appropriate executives of the Parties who have authority to settle the Dispute (or such other individuals designated by the respective executives) shall attempt to resolve the Dispute through good faith negotiation for a reasonable period of time; provided that such reasonable period shall not, unless otherwise agreed by the Parties in writing, exceed thirty (30) days from the time of receipt by a Party of the Dispute Notice. If the Dispute has not been resolved within thirty (30) days after receipt of the Dispute Notice, the respective Chief Executive Officers or their respective designees (with full settlement authority) of bluebird and 2seventy shall meet in person (or where necessary, by phone) at a mutually acceptable time and, if applicable, place, and thereafter as often as they reasonably deem necessary, to attempt in good faith to resolve the Dispute. Any contractual time period or deadline under this Agreement or any Ancillary Agreement to which such Dispute relates occurring after the Dispute Notice is received shall not be deemed to have passed until such Dispute has been resolved pursuant to this Article VII.

Section 7.2 Arbitration. Any Dispute that is not resolved pursuant to Section 7.1 within thirty (30) days after receipt of a Dispute Notice shall be resolved by final and binding arbitration pursuant to the procedures set forth in Section 8.2 of the Separation Agreement.

Section 7.3 Continuity of Service and Performance. Unless otherwise agreed in writing, the Parties shall continue to provide service and honor all other commitments under this Agreement during the course of a Dispute with respect to all matters not subject to such Dispute.

Section 7.4 Injunctive or Other Equity Relief. Nothing contained in this Agreement shall deny any Party the right to seek injunctive or other equitable relief in the context of a bona fide emergency or prospective irreparable harm, and such an action may be filed and maintained notwithstanding any ongoing arbitration proceeding; provided, however, that any other relief not expressly permitted under this Section 7.4 must be pursued in accordance with Section 7.2, with all remedies being cumulative to the extent allowed by applicable Law. The Parties further agree that any action brought under this Section 7.4 shall be brought exclusively in the courts within

the State of Delaware set forth in Section 8.14, and that such courts shall have personal jurisdiction over the Parties in such action.

ARTICLE VIII
MISCELLANEOUS

Section 8.1 Complete Agreement; Construction. This Agreement, together with the Separation Agreement and other Ancillary Agreements, shall constitute the entire agreement between the Parties with respect to the subject matter hereof and shall supersede all previous negotiations, commitments, course of dealings and writings with respect to such subject matter. In the event and to the extent that there shall be a conflict or inconsistency between the provisions of this Agreement and the provisions of the Separation Agreement, this Agreement shall control.

Section 8.2 Transaction Agreements. Except as expressly set forth herein, this Agreement is not intended to address, and should not be interpreted to address, the matters specifically and expressly covered by the other Transaction Agreements.

Section 8.3 Survival of Agreements. Except as otherwise contemplated by this Agreement, all covenants and agreements of the Parties contained in this Agreement shall survive the Distribution Effective Time and remain in full force and effect in accordance with their applicable terms.

Section 8.4 Expenses.

(a) Except as otherwise expressly provided in this Agreement, or as otherwise agreed to in writing by the Parties, all out-of-pocket fees, costs and expenses incurred at or prior to the Distribution Effective Time in connection with, and as required by, the preparation, execution, delivery and implementation of this Agreement shall be borne and paid by bluebird.

(b) Except as otherwise expressly provided in this Agreement (including this Section 8.4), or as otherwise agreed to in writing by the Parties, each Party shall bear its own out-of-pocket costs and expenses incurred or accrued after the Distribution Effective Time; provided, however, that, except as otherwise expressly provided in this Agreement, any fees, costs and expenses incurred in obtaining any Consents or novation from a Third Party in connection with the Transfer to or Assumption by a Party or its Subsidiary of any Assets or Liabilities in connection with the Separation shall be borne by the Party or its Subsidiary to which such Assets are being Transferred or which is Assuming such Liabilities.

(c) Notwithstanding the foregoing, each Party shall be responsible for paying its own internal fees, costs and expenses.

Section 8.5 Notices. All notices, requests, claims, demands and other communications under this Agreement shall be in writing and shall be given or made (and shall be deemed to have been duly given or made upon receipt) by delivery in person, by overnight courier service, by facsimile or email with receipt confirmed (followed by delivery of an original via overnight courier service) or by registered or certified mail (postage prepaid, return receipt requested) to

the respective Parties at the following addresses (or at such other address for a Party as shall be specified in a notice given in accordance with this Section 8.5):

To bluebird:

bluebird bio, Inc.
60 Binney Street
Cambridge, MA 02142
Attn: General Counsel
Facsimile:
Email:

To 2seventy:

2seventy bio, Inc.
60 Binney Street
Cambridge, MA 02142
Attn: General Counsel
Facsimile:
Email:

Section 8.6 Waivers. The delay or failure of either Party to exercise or enforce any of its rights under this Agreement will not constitute, or be deemed to be, a waiver of those rights, nor will any single or partial exercise of any such rights preclude any other or further exercise thereof or the exercise of any other right. No waiver of any provision of this Agreement will be effective unless it is in writing and signed by the Party against which it is being enforced.

Section 8.7 Assignment. No Party may assign any rights or delegate any obligations arising under this Agreement, in whole or in part, directly or indirectly, without the prior written consent of the other Party (such consent not to be unreasonably withheld, conditioned or delayed), and any attempt to so assign any rights or delegate any obligations arising under this Agreement without such consent shall be void. Notwithstanding the foregoing, no such consent shall be required for any such assignment or delegation (i) with respect to bluebird, to a Subsidiary of bluebird (so long as such Subsidiary remains a Subsidiary of bluebird), (ii) with respect to 2seventy, to a Subsidiary of 2seventy (so long as such Subsidiary remains a Subsidiary of 2seventy) or (iii) to a bona fide Third Party in connection with a merger, reorganization, consolidation or the sale of all or substantially all the assets of a Party so long as the resulting, surviving or transferee entity assumes all the obligations of the assigning Party by operation of Law or pursuant to an agreement in form and substance reasonably satisfactory to the non-assigning Party; provided, however, that in the case of each of the preceding clauses (i) and (ii), no assignment permitted by this Section 8.7 shall release the assigning Party from liability for the full performance of its obligations under this Agreement. It is understood and agreed that any Party may cause any of its Subsidiaries to perform any or all of its obligations hereunder, and may designate any of its Subsidiaries to receive any of its entitlements hereunder.

Section 8.8 Successors and Assigns. The provisions of this Agreement and the obligations and rights hereunder shall be binding upon, inure to the benefit of and be enforceable

by (and against) the Parties and their respective successors (whether by merger, acquisition of assets or otherwise) and permitted assigns.

Section 8.9 Termination and Amendment. This Agreement may be terminated, modified or amended, and the Distribution may be amended, modified or abandoned, at any time prior to the Distribution Effective Time by and in the sole and absolute discretion of bluebird without the approval of 2seventy or the stockholders of bluebird. In the event of such termination, no Party shall have any liability of any kind to the other Party or any other Person by reason of such termination. After the Distribution Effective Time, this Agreement may not be terminated, modified or amended except by an agreement in writing signed by bluebird and 2seventy.

Section 8.10 Payment Terms.

(a) Except as otherwise expressly provided to the contrary in this Agreement, any amount to be paid or reimbursed by a Party (and/or a member of such Party's Group) to the other Party (and/or a member of such other Party's Group) under this Agreement shall be paid or reimbursed hereunder within sixty (60) days after presentation of an invoice or a written demand therefor, in either case setting forth, or accompanied by, reasonable documentation or other reasonable explanation supporting such amount.

(b) Except as expressly provided to the contrary in this Agreement, any amount not paid when due pursuant to this Agreement (and any amount billed or otherwise invoiced or demanded and properly payable that is not paid within sixty (60) days of such bill, invoice or other demand) shall bear interest at a rate per annum equal to the Prime Rate, from time to time in effect, plus two percent (2%), calculated for the actual number of days elapsed, accrued from the date on which such payment was due up to the date of the actual receipt of payment.

(c) Without the consent of the Party receiving any payment under this Agreement specifying otherwise, all payments to be made by either bluebird or 2seventy under this Agreement shall be made in U.S. dollars. Except as expressly provided herein, any amount which is not expressed in U.S. dollars shall be converted into U.S. dollars by using the exchange rate published on Bloomberg at 5:00 p.m., Eastern time, on the day before the relevant date, or in The Wall Street Journal, Eastern Edition, on such date if not so published on Bloomberg.

Section 8.11 Subsidiaries. Each of the Parties shall cause to be performed, and hereby guarantees the performance of, all actions, agreements and obligations set forth herein to be performed by any Subsidiary of such Party or by any entity that becomes a Subsidiary of such Party at or after the Distribution Effective Time, in each case to the extent such Subsidiary remains a Subsidiary of the applicable Party.

Section 8.12 Third Party Beneficiaries. This Agreement is solely for the benefit of the Parties and shall not be deemed to confer upon any Person other than the Parties any remedy, claim, liability, reimbursement, cause of Action or other right beyond any that exist without reference to this Agreement.

Section 8.13 Titles and Headings. Titles and headings to sections herein are inserted for the convenience of reference only and are not intended to be a part of or to affect the meaning or interpretation of this Agreement.

Section 8.14 Governing Law. This Agreement will be governed by, construed and interpreted in accordance with the Laws of the State of Delaware, without reference to principles of conflicts of Laws. Each Party irrevocably consents to the exclusive jurisdiction, forum and venue of the Delaware Court of Chancery (and if the Delaware Court of Chancery shall be unavailable, any Delaware State court or the federal court sitting in the State of Delaware) over any and all claims, disputes, controversies or disagreements between the Parties under or related to this Agreement or any of the transactions contemplated hereby, including their execution, performance or enforcement, whether in contract, tort or otherwise. Each of the Parties hereby agrees that it shall not assert, and shall hereby waive, any claim or right or defense that it is not subject to the jurisdiction of such courts, that the venue is improper, that the forum is inconvenient or any similar objection, claim or argument.

Section 8.15 Severability. In the event any one or more of the provisions contained in this Agreement should be held invalid, illegal or unenforceable in any respect, the validity, legality and enforceability of the remaining provisions contained herein and therein shall not in any way be affected or impaired thereby. The Parties shall endeavor in good-faith negotiations to replace the invalid, illegal or unenforceable provisions with valid provisions, the economic effect of which comes as close as possible to that of the invalid, illegal or unenforceable provisions.

Section 8.16 Interpretation. Interpretation of this Agreement shall be governed by the following rules of construction: (a) words in the singular shall be held to include the plural and vice versa, and words of one gender shall be held to include the other gender as the context requires; (b) references to the terms “Section,” “paragraph,” “clause,” “Exhibit” and “Schedule” are references to the Sections, paragraphs, clauses, Exhibits and Schedules of this Agreement unless otherwise specified; (c) the terms “hereof,” “herein,” “hereby,” “hereto,” and derivative or similar words refer to this entire Agreement, including the Schedules and Exhibits hereto; (d) references to “$” shall mean U.S. dollars; (e) the word “including” and words of similar import when used in this Agreement shall mean “including without limitation,” unless otherwise specified; (f) the word “or” shall not be exclusive; (g) references to “written” or “in writing” include in electronic form; (h) unless the context requires otherwise, references to “Party” shall mean bluebird or 2seventy, as appropriate, and references to “Parties” shall mean bluebird and 2seventy; (i) provisions shall apply, when appropriate, to successive events and transactions; (j) the table of contents and headings contained in this Agreement are for reference purposes only and shall not affect in any way the meaning or interpretation of this Agreement; (k) bluebird and 2seventy have each participated in the negotiation and drafting of this Agreement and if an ambiguity or question of interpretation should arise, this Agreement shall be construed as if drafted jointly by the parties and no presumption or burden of proof shall arise favoring or burdening either party by virtue of the authorship of any of the provisions in this Agreement or any interim drafts of this Agreement; and (l) a reference to any Person includes such Person’s successors and permitted assigns.

Section 8.17 No Duplication; No Double Recovery. Nothing in this Agreement, the Separation Agreement or any other Ancillary Agreement is intended to confer to or impose upon any Party a duplicative right, entitlement, obligation or recovery with respect to any matter arising out of the same facts and circumstances.

Section 8.19 Counterparts. This Agreement may be executed in one or more counterparts, all of which shall be considered one and the same agreement, and shall become effective when one or more such counterparts have been signed by each of the Parties and delivered to each of the Parties. Counterparts may be delivered via electronic mail (including pdf or any electronic signature complying with the U.S. federal ESIGN Act of 2000, e.g., www.docusign.com) or other transmission method and any counterpart so delivered shall be deemed to have been duly and validly delivered and be valid and effective for all purposes.

[*Signature Page Follows*]

IN WITNESS WHEREOF, the Parties have caused this Agreement to be duly executed as of the day and year first above written.

BLUEBIRD BIO, INC.

By: /s/ Andrew Obenshain
Name: Andrew Obenshain
Title: President, Severe Genetic Diseases

2SEVENTY BIO, INC.

By: /s/ Nick Leschly
Name: Nick Leschly
Title: President

INTELLECTUAL PROPERTY LICENSE AGREEMENT

THIS INTELLECTUAL PROPERTY LICENSE AGREEMENT ("Agreement"), dated as of November 3, 2021 (the "Effective Date"), is entered into by and between bluebird, Inc. ("bluebird"), a Delaware corporation, and 2seventy, Inc. ("2seventy"), a Delaware corporation and a wholly owned Subsidiary of bluebird. "Party" or "Parties" means bluebird or 2seventy, individually or collectively, as the case may be. Each capitalized term used and not elsewhere defined herein has the meaning set forth in Section 1.1.

WHEREAS, bluebird, acting together with its Subsidiaries, currently conducts the Severe Genetic Disease Business and the Oncology Business;

WHEREAS, the Board of Directors of bluebird (the "Board") has determined that it is appropriate, desirable and in the best interests of bluebird and its stockholders to separate bluebird into two separate, publicly-traded companies, one for each of (i) the Severe Genetic Disease Business, which shall be owned and conducted, directly or indirectly, by bluebird and its Subsidiaries and (ii) the Oncology Business, which shall be owned and conducted, directly or indirectly, by 2seventy and its Subsidiaries, if any (the "Separation");

WHEREAS, the Parties entered into that certain separation agreement, dated as of the Effective Date (the "Separation Agreement") to facilitate the operation of bluebird and 2seventy as separate businesses, and pursuant to the Separation Agreement, the Parties agreed to grant each other licenses under certain intellectual property rights Controlled by each of the Parties for use use, in the case of bluebird, in the bluebird Field and for use, in the case of 2seventy, in the 2seventy Field, as set forth herein.

NOW, THEREFORE, in consideration of the foregoing and the mutual agreements, provisions and covenants contained in this Agreement, the Parties hereby agree as follows:

Article 1 – DEFINITIONS

Capitalized terms used but not defined herein shall have the meaning provided in the Separation Agreement. The following capitalized terms shall have the following meanings:

1.1 "2seventy Field" means any and all uses in connection with the prevention, diagnosis or treatment of oncological diseases or disorders and hemophilia.

1.2 "2seventy Licensed IP Rights" means the 2seventy Licensed Know-How and the 2seventy Licensed Patents for use in the bluebird Field.

1.3 "2seventy Licensed Know-How" means all Know-How Controlled by 2seventy as of the Distribution Effective Time that is useful or necessary for bluebird to make, have made, use, sell, offer for sale, have sold, and import products for use in the bluebird Field.

1.4 "2seventy Licensed Patents" means all Patent Rights Controlled by 2seventy as of the Distribution Effective Time that are useful or necessary for bluebird to make, have made, use, sell, offer for sale, have sold, and import products.

1.5 "Bankruptcy Event" means, with respect to a Party:

(a) the entry by a court of competent jurisdiction of: (i) a decree or order for relief in respect of a Party in an involuntary case or proceeding under any Bankruptcy Law or (ii) a decree or order (w) adjudging a Party a bankrupt or insolvent, (x) approving as properly filed a petition seeking reorganization, arrangement, adjustment or composition of, or in respect of, a Party under any Bankruptcy Law, (y) appointing a custodian of a Party or of any substantial part of the property of a Party, or (z) ordering the winding-up or liquidation of the affairs of a Party, and in each case, the continuance of any such decree or order for relief or any such other decree or order unstayed and in effect for a period of 30 consecutive calendar days; or

(b) (i) the commencement by a Party of a voluntary case or proceeding under any Bankruptcy Law or of any other case or proceeding to be adjudicated a bankrupt or insolvent, (ii) the consent by a Party to the entry of a decree or order for relief in respect of such Party in an involuntary case or proceeding under any Bankruptcy Law or to the commencement of any bankruptcy or insolvency case or proceeding against such Party, (iii) the filing by a Party of a petition or answer or consent seeking reorganization or relief under any Bankruptcy Law, (iv) the consent by a Party to the filing of such petition or to the appointment of or taking possession by a custodian of such Party or of any substantial part of the property of such Party, (v) the making by a Party of an assignment for the benefit of creditors, (vi) the admission by a Party in writing of its inability to pay its debts generally as they become due, or (vii) the approval by stockholders of a Party of any plan or proposal for the liquidation or dissolution of such Party.

1.6 "Bankruptcy Law" means Title 7 or Title 11, U.S. Code, or any similar federal, state or foreign law for the relief of debtors.

1.7 "bluebird Field" means any and all uses in connection with the prevention, diagnosis or treatment of severe genetic diseases including hemophilia.

1.8 "bluebird In-Licenses" means any and all agreements between bluebird and any Third Party existing as of the Effective Date pursuant to which bluebird Controls any bluebird Licensed IP Rights.

1.9 "bluebird Licensed IP Rights" means the bluebird Licensed Know-How and the bluebird Licensed Patents.

1.10 "bluebird Licensed Know-How" means all Know-How Controlled by bluebird as of the Distribution Effective Time that is useful or necessary for 2seventy to make, have made, use, sell, offer for sale, have sold, and import products for use in the 2seventy Field (including

using any process for producing transient transfection suspension lentiviral vector to Manufacture lentiviral vectors), including certain rights subject to the bluebird In-Licenses but excluding the bluebird Exclusive Licensed Know-How.

1.11 "bluebird Licensed Patents" means all Patent Rights Controlled by bluebird as of the Distribution Effective Time that are useful or necessary for 2seventy to make, have made, use, sell, offer for sale, have sold, and import products for use in the 2seventy Field (including using any process for producing transient transfection suspension lentiviral vector to

Manufacture lentiviral vectors), including certain Patent Rights subject to the bluebird In-Licenses but excluding the bluebird Exclusive Licensed Patents.

1.12 "Control" and any cognate thereof means, with respect to Licensed IP Rights, the possession by a Party or any of its Affiliates of the ability to grant a (sub)license under such Licensed IP Rights (whether by sole or joint ownership or by (sub)license (other than pursuant to this Agreement)), without violating the terms of any agreement or other arrangement with any Third Party and without any obligation to pay royalties or any other payments or provide consideration to any Third Party in each case attributable to a sublicense to the other Party or any of its Affiliates.

1.13 "Know-How" means trade secrets, and all other confidential or proprietary information, know-how, clinical data, non-clinical data, pre-clinical data, in vitro data, inventions, processes, formulae and methodologies, excluding Patent Rights.

1.14 "Licensed IP Rights" means the bluebird Licensed Patents and bluebird Licensed Know-How and the 2seventy Licensed Patents and 2seventy Licensed Know-How. A Party's Licensed IP Rights are, for bluebird, the bluebird Licensed Patents and bluebird Licensed Know-How and, for 2seventy, the 2seventy Licensed Patents and 2seventy Licensed Know-How.

1.15 "Licensed Know-How" means the bluebird Licensed Know-How and the 2seventy Licensed Know-How. A Party's Licensed Know-How are, for bluebird, the bluebird Licensed Know-How and the bluebird Exclusive Licensed Know-How and, for 2seventy, the 2seventy Licensed Know-How.

1.16 "Licensed Patents" means the bluebird Licensed Patents and the 2seventy Licensed Patents. A Party's Licensed Patents are, for bluebird, the bluebird Licensed Patents and bluebird Exclusive Licensed Patents and, for 2seventy, the 2seventy Licensed Patents.

1.17 "Patent Rights" means patents and patent applications, and any and all related national or international counterparts thereto and utility models, including any provisionals, divisionals, continuations, continuations-in-part, reissues, reexaminations, substitutions and extensions thereof (including supplementary protection certificates, patent term adjustments, and patent term extensions).

1.18 "Person" means an individual, a general or limited partnership, a corporation, a trust, a joint venture, an unincorporated organization, a limited liability entity, any other entity and any Governmental Entity.

1.19 "Regulatory Documentation" means any and all applications, approvals, filings or submissions made or maintained by bluebird with regulatory authorities relating to the sLVV Process.

1.20 "Right of Reference" means the "right of reference or use" as that term is defined in 21 C.F.R. § 314.3(b) and any foreign counterpart to such regulation

1.21 "sLVV Process" means (i) Bluebird's proprietary transient transfection suspension lentiviral vector process and (ii) any process for producing transient transfection

suspension lentiviral vector that includes one or more steps derived from a process described in the foregoing clause (i).

1.22 "(sub)license" shall mean license or sublicense, as applicable, and "(sub)licensee" shall mean licensee or sublicensee, as applicable.

1.23 "Third Party" means any person or entity other than a Party or any of their respective Subsidiaries.

Article 2– GRANTS

2.1 **License Grants**.

2.1.1 bluebird License Grant. Subject to the terms and conditions of this Agreement, bluebird hereby grants to 2seventy and its Affiliates a perpetual, irrevocable, royalty-free, non-exclusive and worldwide (sub)license under the bluebird Licensed IP Rights to make, have made, use, offer for sale, sell and import products and services in the 2seventy Field.

2.1.2 2seventy License Grant. Subject to the terms and conditions of this Agreement, 2seventy hereby grants to bluebird and its Affiliates a perpetual, irrevocable, royalty-free, non-exclusive and worldwide (sub)license under the 2seventy Licensed IP Rights to make, have made, use, offer for sale, sell and import products and services in the bluebird Field.

2.1.3 Affiliates and License Grants. The foregoing (sub)license grants automatically extend, without any further action by a Party, to each person and entity that is an Affiliate of such Party as of the Effective Date or becomes an Affiliate of such Party thereafter, but only for so long as such person or entity remains an Affiliate of such Party, and the other Party shall be in direct privity under this Agreement with any such (sub)licensed Affiliate under this Agreement.

2.2 **bluebird In-Licenses**.

2.2.1 bluebird Covenants. bluebird covenants: (i) not to amend, modify or waive any terms, conditions, rights or obligations of the parties under any bluebird In-Licenses to the extent it would impair the rights granted to 2seventy hereunder, (ii) to keep the bluebird In-Licenses in full force and effect and not to breach any obligations of bluebird thereunder, (iii) to provide 2seventy with prompt written notice and a specific description of any assertion of a breach or other claim arising under any bluebird In-License, (iv) to permit 2seventy to remedy any breach or alleged breach by bluebird under any bluebird In-License and to promptly reimburse 2seventy for all costs reasonably incurred in connection therewith and (v) in the event of a termination of any bluebird In-License, Bluebird shall use all reasonable efforts to ensure that (a) any rights granted under such bluebird In-License that are sublicensed to 2seventy pursuant to this Agreement shall survive such termination or (b) the licensor under such bluebird In-License promptly enters into a direct license agreement with 2seventy equivalent in scope to the license set forth in this Agreement, in each case ((a) and (b)) on terms that are satisfactory to 2seventy.

2.2.2 2seventy Acknowledgment and Covenants. 2seventy acknowledges that the rights granted herein to 2seventy under the bluebird In-Licenses are subject to the terms and conditions set forth in such bluebird In-Licenses. 2seventy covenants not to breach any terms or conditions of any bluebird In-Licenses pertaining to sublicensees thereunder and to perform and take such actions as may be required to allow bluebird to comply with its obligations thereunder, including obligations relating to sublicensing, patent matters, confidentiality, reporting, audit rights and diligence. 2seventy further agrees to reimburse bluebird (or to pay directly to the other party under the applicable bluebird In-License, if bluebird and such other party so agree) all amounts that become due and payable under the bluebird In-Licenses on account of 2seventy's exercise of the rights under the bluebird In-Licenses that are sublicensed to 2seventy hereunder.

2.3 **Sublicense Rights**. Each Party (but not its Affiliates) shall have the right to grant sublicenses to Third Parties under the license granted to it pursuant to Section 2.1. Sublicensees hereunder may grant further sublicenses. The sublicensing Party shall remain responsible for the compliance by each of its Affiliates and all sublicensees (whether direct or indirect) with all relevant restrictions and limitations and any other applicable terms and conditions in this Agreement.

2.4 **No Other Rights**. Nothing in this Agreement shall be interpreted to grant either Party any rights under any Licensed IP Rights or other intellectual property rights of the other Party that are not expressly granted herein, whether by implication, estoppel or otherwise.

2.5 **License in Bankruptcy**. All (sub)licenses granted under this Agreement by either Party to the other Party shall be deemed to be, for the purpose of Section 365(n) of the United States Bankruptcy Code, as amended (the "Bankruptcy Code"), licenses of rights to "intellectual

property" as defined under Section 101(35A) of the Bankruptcy Code. The Parties agree that either Party, as (sub)licensee of such intellectual property rights under this Agreement, shall retain and may fully exercise all of its rights and elections under the Bankruptcy Code. The Parties further agree that, upon the occurrence of a Bankruptcy Event with respect to a Party, each Party shall have the right to retain and enforce their rights under this Agreement, subject to Section 7.5.

2.6 **Regulatory Matters**. Bluebird hereby grants to 2Seventy, at no additional cost, a Right of Reference to any and all Regulatory Documentation made or maintained by bluebird with regulatory authorities relating to the sLVV Process. Bluebird will promptly notify 2Seventy with respect to any new or amended Regulatory Documentation and will provide 2Seventy with an opportunity to review and comment on any such submissions to the extent pertaining to a material change in the sLVV Process. The Parties will enter into a quality agreement promptly after the Effective Date to better coordinate regulatory compliance activities relating to the use of the sLVV Process.

Article 3 – PATENT-RELATED PROVISIONS

3.1 **Prosecution and Enforcement**.

3.1.1 Maintenance of Patent Rights. Except as otherwise set forth in this Agreement, neither Party shall have any obligation to obtain or maintain Control of any Patent

Rights for (sub)license to the other Party; except that: (i) to the extent such granting Party has the right to assign such Patent Right to the other Party in lieu of abandoning such Patent Right, such granting Party will provide thirty (30) days prior written notice of such planned abandonment to the other Party and such granting Party shall, if so requested by the other Party, either assign such Patent Right to the other Party or maintain such Patent Right for the benefit of the other Party; provided that such other Party reimburses the granting Party for all costs reasonably incurred in connection with such maintenance and (ii) bluebird shall have the obligation to maintain the Patent Rights under the bluebird In-Licenses (a) as and to the extent provided in the bluebird In-Licenses and requested by 2seventy and (b) in accordance with directions provided by 2seventy (to the extent consistent with applicable laws and the applicable bluebird In-License); provided that 2seventy reimburses bluebird for fifty percent (50%) of the costs reasonably incurred in connection with such maintenance.

3.1.2 Enforcement of Patent Rights. Neither Party shall have any right to enforce any of the other Party's Patent Rights except that, as between the Parties, bluebird shall (a) have the first right to enforce, or to authorize 2seventy to enforce, the Patent Rights under the bluebird In-Licenses for infringement within the 2seventy Field, as and to the extent provided in the applicable bluebird In-License, and in accordance with directions provided by 2seventy (to the extent consistent with applicable laws and the applicable bluebird In-License); provided that

2seventy reimburses bluebird for all costs reasonably incurred in connection with such enforcement and (b) bluebird shall promptly remit to 2seventy all amounts recovered in connection with such enforcement activities that bluebird (as between bluebird and the other party to the applicable bluebird In-License) has the right to retain or receive pursuant to the applicable bluebird In-License.

3.2 **Patent Marking**. Each Party will mark any product or service as required by applicable patent marking law with any of the other Party's Licensed Patents.

3.3 **No Challenge**. Neither a Party nor any of its Affiliates shall challenge the validity or enforceability of any of the other Party's Licensed Patents, nor shall any of its sublicensees or their Affiliates so challenge any such sublicensed Licensed Patents, by initiating or continuing any court or administrative action or by intentionally supporting in a material fashion any Third Party in doing the same (other than as may be required by any court order).

Article 4 – CONFIDENTIAL INFORMATION

4.1 **Generally**. During the term of this Agreement and for a period of five (5) years following expiration or termination of this Agreement, each Party (a) shall maintain in confidence all Confidential Information of the other Party; (b) shall not use such Confidential Information for any purpose except in connection with the activities contemplated by this Agreement or in order to further the purposes of this Agreement or as permitted hereunder by (sub)license; and (c) shall not disclose such Confidential Information to anyone other than those of its Affiliates and their investors, prospective investors, lenders, prospective lenders, acquirors, prospective acquirors, permitted sublicensees, prospective sublicensees, employees, consultants, advisors, agents or subcontractors (collectively, "Permitted Recipients") who are bound by written obligations of nondisclosure and non-use no less stringent than those set forth in this Article 4 and to whom such disclosure is necessary or useful in connection with such Party's

reasonable business activities. Each Party shall ensure that such Party's Permitted Recipients comply with these obligations. Each Party shall notify the other promptly on discovery of any unauthorized use or disclosure of the other's Confidential Information.

4.2 **Exceptions**. The obligations of confidentiality, non-disclosure, and non-use set forth in Section 4.1 shall not apply to the extent the receiving Party (the "Recipient") can demonstrate that the disclosed information (a) was in the public domain at the time of disclosure to the Recipient by the other Party, or thereafter entered the public domain, in each case other than as a result of actions of the Recipient or its Permitted Recipients; (b) was rightfully known by the Recipient or its Permitted Recipients (as shown by its written records) prior to the date of disclosure to the Recipient by the other Party; (c) was received by the Recipient or its Permitted Recipients on an unrestricted basis from a Third Party rightfully in possession of such information and not under a duty of confidentiality to the other Party; or (d) was independently

developed by or for the Recipient or its Permitted Recipients without reference to or reliance on the Confidential Information of the other Party (as demonstrated by written records). Notwithstanding any other provision of this Agreement, Recipient's disclosure of Confidential Information shall not be prohibited if such disclosure: (i) is in response to a valid order of a court or other governmental body of the U.S., provided that Recipient provides the other Party with prior written notice of such disclosure in order to permit the other Party to seek a protective order or other confidential treatment of such Confidential Information; or (ii) is otherwise required by applicable law or regulation or rules of a nationally recognized securities exchange. Further notwithstanding any other provision of this Agreement, either Party may disclose Confidential Information of the other Party to the extent necessary to exercise the rights granted to or retained by the Recipient under this Agreement in filing or prosecuting Patent Rights, prosecuting or defending litigation or otherwise establishing rights or enforcing obligations under this Agreement.

Article 5– REPRESENTATIONS AND WARRANTIES

5.1 **Mutual Warranties**. Each Party represents to the other as of the Effective Date that:

5.1.1 It is a corporation duly organized and validly existing under the laws of the state of its incorporation;

5.1.2 The execution, delivery and performance of this Agreement by it has been duly authorized by all requisite corporate action;

5.1.3 This Agreement is legally binding and enforceable against it in accordance with its terms;

5.1.4 It has the power and authority to execute and deliver this Agreement, and to perform its obligations hereunder, and such performance does not conflict with or constitute a breach of any of its agreements with a Third Party; and

5.1.5 It has the right to grant the rights and (sub)licenses described in this Agreement.

5.2 **No Other Representations or Warranties**. OTHER THAN AS SET FORTH IN SECTION 5.1, NEITHER PARTY MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND, INCLUDING ANY WARRANTY OR REPRESENTATION AS TO THE VALIDITY, PATENTABILITY, ENFORCEABILITY OR SCOPE OF SUCH PARTY'S CROSS-LICENSED IP RIGHTS OR ANY WARRANTY OR REPRESENTATION THAT ANY MANUFACTURE, USE, SALE, OFFER FOR SALE, IMPORT, LEASE OR OTHER DISPOSITION OF PRODUCTS OR SERVICES BY THE OTHER PARTY WILL BE FREE

FROM INFRINGEMENT OF ANY PATENT RIGHTS OTHER THAN SUCH PARTY'S CROSS-LICENSED IP RIGHTS LICENSED HEREIN.

Article 6 – TERM AND PATENT LICENSE PERIOD

6.1 **Term of the Agreement**. The term of this Agreement shall be perpetual; provided that, the rights and obligations hereunder shall terminate (a) with respect to Patent Rights, upon the expiration of such Patent Right and (b) with respect to rights under a bluebird In-License, upon expiration or termination of such bluebird In-License.

6.2 **No Early Termination**. No Party may unilaterally terminate this Agreement or any (sub)licenses granted hereunder, for any reason, including a material breach of this Agreement by the other Party, provided, however, that each Party will retain and may pursue any remedies for such breach that it may be entitled to in a court of law or equity, including monetary damages and injunctive and equitable relief.

Article 7– MISCELLANEOUS PROVISIONS

7.1 **Relationship to Separation Agreement**. The Parties agree and acknowledge that this Agreement is a Transaction Agreement for purposes of the Separation Agreement and the Parties intend and agree that this Agreement shall be subject to the terms and conditions set forth in the Separation Agreement that are made applicable thereby to Transaction Agreements.

7.2 **Waivers**. The delay or failure of either Party to exercise or enforce any of its rights under this Agreement will not constitute, or be deemed to be, a waiver of those rights, nor will any single or partial exercise of any such rights preclude any other or further exercise thereof or the exercise of any other right. No waiver of any provision of this Agreement will be effective unless it is in writing and signed by the Party against which it is being enforced.

7.3 **Assignment**. No Party may assign any rights or delegate any obligations arising under this Agreement (excluding, for avoidance of doubt, sublicenses granted in accordance herewith), in whole or in part, directly or indirectly, without the prior written consent of the other Party (such consent not to be unreasonably withheld, conditioned or delayed), and any attempt to so assign any rights or delegate any obligations arising under this Agreement without such consent shall be void. Notwithstanding the foregoing, no such consent shall be required for any such assignment or delegation (i) with respect to bluebird, to a Subsidiary of bluebird (so long as such Subsidiary remains a Subsidiary of bluebird), (ii) with respect to 2seventy, to a Subsidiary of 2seventy (so long as such Subsidiary remains a Subsidiary of 2seventy) or (iii) to a *bona fide* Third Party in connection with a merger, reorganization, consolidation or the sale of all or substantially all the assets of a Party so long as the resulting, surviving or transferee entity

assumes all the obligations of the assigning Party by operation of Law or pursuant to an agreement in form and substance reasonably satisfactory to the non-assigning Party; provided,

however, that in the case of each of the preceding clauses (i) and (ii), no assignment permitted by this Section 7.3 shall release the assigning Party from liability for the full performance of its obligations under this Agreement.

7.4 **Successors and Assigns**. The provisions of this Agreement and the obligations and rights hereunder shall be binding upon, inure to the benefit of and be enforceable by (and against) the Parties and their respective successors (whether by merger, acquisition of assets or otherwise) and permitted assigns.

7.5 **Payment Terms**.

(a) Any amount to be paid or reimbursed by a Party to the other Party under this Agreement shall be paid or reimbursed hereunder within sixty (60) days after presentation of an invoice or a written demand therefor, in either case setting forth, or accompanied by, reasonable documentation or other reasonable explanation supporting such amount.

(b) Any amount not paid when due pursuant to this Agreement (and any amount billed or otherwise invoiced or demanded and properly payable that is not paid within sixty (60) days of such bill, invoice or other demand) shall bear interest at a rate per annum equal to the Prime Rate, from time to time in effect, plus two percent (2%), calculated for the actual number of days elapsed, accrued from the date on which such payment was due up to the date of the actual receipt of payment.

(c) Without the consent of the Party receiving any payment under this Agreement specifying otherwise, all payments to be made by either bluebird or 2seventy under this Agreement shall be made in U.S. dollars.

7.6 **Subsidiaries**. Each of the Parties shall cause to be performed, and hereby guarantees the performance of, all actions, agreements and obligations set forth herein to be performed by any Subsidiary of such Party or by any entity that becomes a Subsidiary of such Party at or after the Effective Date in each case to the extent such Subsidiary remains a Subsidiary of the applicable Party.

7.7 **Third Party Beneficiaries**. This Agreement is solely for the benefit of the Parties and shall not be deemed to confer upon any Person other than the Parties any remedy, claim, liability, reimbursement, cause of Action or other right beyond any that exist without reference to this Agreement.

7.8 **Titles and Headings**. Titles and headings to sections herein are inserted for the convenience of reference only and are not intended to be a part of or to affect the meaning or interpretation of this Agreement.

7.9 **Governing Law**. This Agreement will be governed by, construed and interpreted in accordance with the Laws of the State of Delaware, without reference to principles of conflicts

of Laws. Each Party irrevocably consents to the exclusive jurisdiction, forum and venue of the Delaware Court of Chancery (and if the Delaware Court of Chancery shall be unavailable, any

Delaware State court or the federal court sitting in the State of Delaware) over any and all claims, disputes, controversies or disagreements between the Parties under or related to this Agreement or any of the transactions contemplated hereby, including their execution, performance or enforcement, whether in contract, tort or otherwise. Each of the Parties hereby agrees that it shall not assert, and shall hereby waive, any claim or right or defense that it is not subject to the jurisdiction of such courts, that the venue is improper, that the forum is inconvenient or any similar objection, claim or argument.

7.10 **Severability**. In the event any one or more of the provisions contained in this Agreement should be held invalid, illegal or unenforceable in any respect, the validity, legality and enforceability of the remaining provisions contained herein and therein shall not in any way be affected or impaired thereby. The Parties shall endeavor in good-faith negotiations to replace the invalid, illegal or unenforceable provisions with valid provisions, the economic effect of which comes as close as possible to that of the invalid, illegal or unenforceable provisions.

7.11 **Interpretation**. The Parties have participated jointly in the negotiation and drafting of this Agreement. This Agreement shall be construed without regard to any presumption or rule requiring construction or interpretation against the Party drafting or causing any instrument to be drafted.

7.12 **No Duplication; No Double Recovery**. Nothing in this Agreement is intended to confer to or impose upon any Party a duplicative right, entitlement, obligation or recovery with respect to any matter arising out of the same facts and circumstances.

7.13 **No Waiver**. No failure to exercise and no delay in exercising, on the part of any Party, any right, remedy, power or privilege hereunder shall operate as a waiver hereof or thereof; nor shall any single or partial exercise of any right, remedy, power or privilege hereunder or thereunder preclude any other or further exercise thereof or the exercise of any other right, remedy, power or privilege.

[Signature Page Follows]

IN WITNESS WHEREOF, the Parties have caused this Agreement to be duly executed as of the day and year first above written.

BLUEBIRD BIO, INC.

By: /s/ Andrew Obenshain
Name: Andrew Obenshain
Title: President, Severe Genetic Diseases

2SEVENTY BIO INC.

By: /s/ Nick Leschly
Name: Nick Leschly
Title: President

TRANSITION SERVICES AGREEMENT
by and between

BLUEBIRD BIO, INC.

and

2SEVENTY BIO, INC.

Dated as of November 3, 2021

TRANSITION SERVICES AGREEMENT
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TRANSITION SERVICES AGREEMENT

This TRANSITION SERVICES AGREEMENT (this "Agreement"), dated as of November 3, 2021 (the "Effective Date"), is entered into by and between bluebird bio, Inc. ("bluebird"), a Delaware corporation, and 2seventy bio, Inc. ("2seventy"), a Delaware corporation. "Party" or "Parties" means bluebird or 2seventy, individually or collectively, as the case may be. Capitalized terms used and not defined herein shall have the meaning set forth in the Separation Agreement between the Parties, dated as of November 3, 2021 (the "Separation Agreement").

W I T N E S S E T H:

WHEREAS, in conjunction with the Separation Agreement and the consummation of the transactions contemplated thereby, 2seventy desires to obtain certain transition services from bluebird, and bluebird is willing to provide such services to 2seventy on the terms and conditions set forth in this Agreement; and

WHEREAS, the Parties acknowledge that the efficient and effective transition of certain services under this Agreement in a manner that permits the successful operations of each Party following the Separation is a priority to the stockholders of each Party.

NOW, THEREFORE, in consideration of the foregoing and the mutual agreements, provisions and covenants contained in this Agreement, the Parties hereby agree as follows:

ARTICLE I
DEFINITIONS

Section 1.1 General. As used herein, the following terms have the following meanings:

(1) "2seventy Intellectual Property Rights" shall have the meaning set forth in Section 2.11(a).

(2) "Additional Service" shall have the meaning set forth in Section 2.6.

(3) "Dispute Notice" shall have the meaning set forth in Section 7.1.

(4) "Disputes" shall have the meaning set forth in Section 7.1.

(5) "Expenses" shall have the meaning set forth in Section 3.2.

(6) "Fees" shall have the meaning set forth in Section 3.1.

(7) "Force Majeure" shall have the meaning set forth in Section 10.6(a).

(8) "Information System Additions" shall have the meaning set forth in Section 2.3(b).

(9) "Intellectual Property Rights" shall have the meaning set forth in Section 2.11(a).

(10) "IT Acceptable Use Policy" shall have the meaning set forth in Section 2.3(a).

(11) "Migration Plan" shall have the meaning set forth in Section 2.12.

(12) "Omitted Service" shall have the meaning set forth in Section 2.5.

(13) "One-Time Costs" shall have the meaning set forth in Section 3.1.

(14) "Prior Period" shall have the meaning set forth in Section 2.2.

(15) "Provider Third Party Contracts" shall have the meaning set forth in Section 6.3.

(16) "Quarterly Statement" shall have the meaning set forth in Section 3.3.

(17) "Service Coordinator" shall have the meaning set forth in Section 4.2.

(18) "Service Provider" means, as the context may require, bluebird or, if not bluebird, the Person providing the Services on behalf of bluebird, including any of its Affiliates (it being agreed and understood that, for purposes of this Agreement, bluebird shall cause each such Person to comply with the provisions of this Agreement applicable to such Person in such Person's capacity as a "Service Provider").

(19) "Services" means (a) all of the services to be provided by or on behalf of a Service Provider under this Agreement, each as described on a Transition Service Schedule as such Transition Service Schedule may be updated and supplemented from time to time in accordance with the provisions of this Agreement, (b) any Omitted Services and (c) any Additional Services. "Service" means each such service.

(20) "Term" means the period commencing upon the Distribution Effective Time and ending, subject to Section 6.1, upon the earlier of (i) the expiration of all Services set forth in the Transition Service Schedules and (ii) the second (2^{nd}) anniversary of the Distribution Date.

(21) "Third Party" means any person or entity other than bluebird, 2seventy or their Affiliates.

(22) "Third Party Costs" means the price paid by bluebird or its Affiliates to a Third Party (not in its capacity as a Service Provider) for all applicable Services provided by such Third Party to bluebird or its Affiliates that are directly allocable to the provision of Services hereunder. For clarity, there shall be no mark-up added to Third Party Costs under this Agreement, unless such mark-up was actually paid by bluebird or its Affiliates to a Third Party.

(23) "Transition Committee" shall have the meaning set forth in Section 4.1.

(24) "Transition Service Schedule" means a transition service schedule in the form attached hereto as Schedule 1.1, as mutually agreed upon by the Parties with respect to each Service to be provided hereunder.

(25) "VAT" shall have the meaning set forth in Section 3.6.

ARTICLE II
SERVICES

Section 2.1 General. During the Term, subject to Section 2.2, bluebird shall (and shall cause each Service Provider providing Services to) provide to 2seventy and, to the extent directed by 2seventy, its Affiliates, the Services, in each case subject to the terms and conditions set forth herein and on the applicable Transition Service Schedule. Notwithstanding anything to the contrary herein, a Service Provider shall not be required to perform or cause to be performed any of the Services for the benefit of any Person other than 2seventy and its Affiliates. The Parties agree to negotiate in good faith any proposed changes to the Services, including pricing related thereto, during the Term. Such proposed changes will become effective only upon mutual agreement of the Parties as reflected in a Transition Service Schedule. If there is any inconsistency between the terms of a Transition Service Schedule and the terms of this Agreement, the terms of this Agreement will govern. The Parties acknowledge and agree that the Services are generally intended to facilitate the transactions contemplated by the Separation Agreement, and, to the extent Services described in any Transition Service Schedule are general in nature, are solely intended to support the continued operation of the Oncology Business.

Section 2.2 Standard for Services. bluebird shall use commercially reasonable efforts to provide, or cause to be provided, to 2seventy the Services in accordance with the terms and conditions of this Agreement. bluebird shall provide, or cause to be provided, the Services in a manner (i) in compliance in all material respects with all applicable Laws and (ii) generally consistent with the provision of the Services to the Oncology Business during the twelve (12) months immediately prior to the date hereof (the "Prior Period"); provided that if a Service Provider has not previously provided a Service to another Person, the Service Provider shall provide such Service in a manner generally consistent with the provision of similar services

provided to its Affiliates or businesses. To the extent a more specific standard of care is specified in a Transition Service Schedule with respect to any Service, a Service Provider shall use its commercially reasonable efforts to comply with such more specific standard. It is the Parties' shared objective to transition responsibility for the performance of all Services from Service Provider to 2seventy and its Affiliates in a manner that minimizes, to the extent reasonably possible, disruption to the business operations of the Service Providers and their Affiliates and the business operations of 2seventy and its Affiliates. Notwithstanding any provision of this Agreement or the Separation Agreement to the contrary, no Service Provider shall be required to (a) perform any Service in any manner that violates or contravenes any restrictions imposed on the Service Provider by applicable Law, (b) perform any Service in any manner that breaches or contravenes any contractual obligations owed by the Service Provider to any Third Party(ies) or (c) perform any Service to the extent that the conduct of such would, in the good faith belief of such Service Provider, infringe, violate or misappropriate intellectual property rights of any Third Party. Notwithstanding any provision of this Agreement to the contrary, but without limiting a Service Provider's obligations under Section 2.1 or this Section 2.2, in no event shall bluebird or any of its Affiliates be: (i) obligated to make any specific employment decisions in terms of hiring, retaining or terminating employees; (ii) obligated to enter into retention agreements with employees or otherwise provide any incentive beyond payment of regular salary and benefits; (iii) prevented from transferring after the Distribution Effective Time any employees who were supporting the Oncology Business as of the Distribution Effective Time to support other products for bluebird or its Affiliates or to assume other roles with bluebird or its Affiliates to the extent such employees are not required to provide Services; (iv) prevented from determining, in its sole discretion, the individual employees or contractors who provide Services or from terminating or otherwise disciplining employees; (v) obligated to purchase, lease or license any additional equipment or software, except as specifically provided for in a Transition Service Schedule; or (vi) obligated to create or supply any documentation or information not currently existing or reasonably available, except as specifically provided for in a Transition Service Schedule.

Section 2.3 Protection of bluebird Information Systems.

(a) In providing information technology Services to 2seventy, bluebird shall have the right to implement reasonable processes from time to time under which there will be no greater threat to bluebird's information technology operating environment than would exist in the absence of the provision of such Services. Without limiting the foregoing, 2seventy shall, and shall cause each of its employees with access to bluebird's information technology operating environment to, comply with the terms and conditions of the applicable bluebird policy set forth in Schedule 2.3 hereunder as may be amended from time to time upon written notice by bluebird

to 2seventy (such policy, the "IT Acceptable Use Policy"), and with the terms of any bluebird restrictive covenant agreement, except as expressly waived by bluebird.

(b) If, in connection with the provision of any Services under this Agreement, it is reasonably necessary for bluebird to implement any information technology connections, firewalls or the like ("Information System Additions") specifically in connection with the provision of such Services and that would not have otherwise been implemented in the absence of the provision of the Services, the costs of implementing such Information System Additions shall be borne by 2seventy, unless specifically provided otherwise in a Transition Service Schedule or otherwise agreed to in writing by bluebird.

Section 2.4 Transitional Nature of the Services; Changes.

(a) 2seventy understands that the Services provided hereunder are transitional in nature and are furnished by the Service Providers as an accommodation and for the purpose of facilitating the transactions contemplated by the Separation Agreement. Each of the Parties agrees to cooperate in good faith and use, and shall cause its Affiliates to use, commercially reasonable efforts to effect a smooth transition from the Services as provided by the Service Provider to services performed by 2seventy or furnished by another party as soon as practically possible, but in no case later than the expiration of the Term. 2seventy further understands that the Service Providers are not in the business of providing Services to Third Parties and shall not provide Services beyond the Term.

(b) 2seventy acknowledges and agrees that bluebird or its Affiliates may make changes from time to time in the manner of performing the Services if bluebird or its Affiliates: (i) are making similar changes in the performance of similar services for itself or their own Affiliates; (ii) furnish to 2seventy notice with respect to such changes, and if applicable, substantially the same notice (in content and timing) as bluebird or its Affiliates shall furnish to their own Affiliates with respect to such changes; and (iii) considers in good faith any reasonable concerns of 2seventy provided in writing related to implementing any such changes.

Section 2.5 Omitted Services. If, during the sixty (60) day period immediately following the date of this Agreement, either Party identifies a service that was provided in connection with the Oncology Business (other than those services expressly excluded hereunder) during the Prior Period, or which are reasonably anticipated as of the date hereof to be necessary to continue to support the Oncology Business during the Term, but such services were inadvertently omitted from the Transition Service Schedules (each, to the extent included in the Services pursuant to this Section, an "Omitted Service") and notifies the other Party thereof, then the Parties shall enter into good faith discussions as to whether such Omitted Service should be added as a Service hereunder, taking into account considerations such as whether the provision

of such Service would be commercially reasonable from Service Provider's perspective and whether the Omitted Service can be obtained from a provider other than the Service Provider at comparable or lower expense. If the Parties determine that an Omitted Service will be provided under this Agreement, then the Parties shall cooperate in preparing a Transition Service Schedule to add such Omitted Service as a Service; provided that, notwithstanding anything to the contrary in this Agreement, Service Provider shall not be obligated to provide any Omitted Service if it does not, in its reasonable judgment, have adequate resources to provide such Omitted Service or if the provision of such Omitted Service would significantly disrupt the operation of its business. In the event that the Parties agree that a Service Provider should provide any such Omitted Service, the Parties shall execute a Transition Service Schedule for such Omitted Service that will set forth, among other things, (a) the time period during which such Omitted Service will be provided, (b) a description of such Omitted Service in reasonable detail, (c) primary points of contact for each of the Parties with respect to the Service, (d) any costs related to such Omitted Service and agreed upon by the Parties, and (e) any additional terms and conditions specific to such Omitted Service. A Service Provider's obligations with respect to providing any such Omitted Service shall become effective only upon mutual agreement of the Parties as reflected in such Transition Service Schedule. Notwithstanding the foregoing, the time period for any such Omitted Service will expire not later than the expiration of the Term as calculated prior to the addition of such Omitted Service unless the Parties mutually agree otherwise.

Section 2.6 Additional Services. The Parties hereto acknowledge that the Transition Service Schedules might not identify all of the Services that, although not provided in connection with the Oncology Business during the Prior Period, may be necessary or appropriate to effect the understanding set forth in this Agreement. 2seventy may request such additional Services from a Service Provider (each, to the extent included in the Services pursuant to this Section 2.6, an "Additional Service") in writing during the Term. A Service Provider shall consider any such request for Additional Services promptly and in good faith, except to the extent such request is for Omitted Services (in which case Section 2.5 shall govern) or for services intentionally not included by mutual agreement of the Parties as part of the Services as of the Effective Date. In the event that the Parties agree that a Service Provider should provide any such Additional Service, the Parties shall execute a Transition Service Schedule that will set forth, among other things, (a) the time period during which such Additional Service will be provided, (b) a description of such Additional Service in reasonable detail, (c) primary points of contact for each of the Parties with respect to the Service, (d) any costs related to such Additional Service and agreed upon by the Parties, and (e) any additional terms and conditions specific to such Additional Service. A Service Provider's obligations with respect to providing any such Additional Service will become effective only upon mutual agreement of the Parties as reflected in such Transition Service Schedule. Notwithstanding the foregoing, the time period for any

such Additional Service will expire not later than the expiration of the Term as calculated prior to the addition of such Additional Service unless the Parties mutually agree otherwise.

Section 2.7 Use of Third Parties. 2seventy understands that certain Services may be provided to it by a Service Provider pursuant to agreements between the Service Provider and various Third Parties. To the extent not prohibited by a Third Party and with 2seventy's consent (not to be unreasonably withheld, conditioned or delayed), the Service Provider shall coordinate the provision of Services by the Third Party to 2seventy, and 2seventy shall reasonably cooperate with any Third Party providing Services on behalf of the Service Provider in order to facilitate the provision and receipt of such Services.

Section 2.8 Cooperation. 2seventy and its Affiliates who are recipients of the Services shall reasonably cooperate with each Service Provider in order to facilitate the provision and receipt of the Services. 2seventy acknowledges that such Services are dependent on such reasonable cooperation, and that its or its Affiliates' failure to so cooperate, if not reasonable, will relieve the Service Provider of its obligation to provide the related Services to the extent such failure renders such provision impractical or impossible. 2seventy and its Affiliates who are recipients of the Services shall comply in all material respects with all applicable policies and procedures of the Service Provider.

Section 2.9 Location of Services Provided; Access. Each Service Provider shall provide the Services to 2seventy from locations of the Service Provider's choice in its sole discretion unless Services are required to be performed at a specific location identified in a Transition Service Schedule. Certain key personnel of the Service Providers who are expected to be utilized to perform Services may be required to travel to the offices of 2seventy or between Service Provider locations. Each Party shall allow the other Party and its Affiliates and Representatives reasonable access to the facilities of such Party and its Affiliates that is necessary for each Service Provider to provide Services or for 2seventy and its Affiliates to receive the Services in accordance with this Agreement, subject to applicable confidentiality and non-use restrictions consistent with those set forth in this Agreement. Each Party agrees that all of its and its Affiliates' employees shall, and that it shall use commercially reasonable efforts to cause its Representatives' employees to, when on the property of the other Party or any of its Affiliates, or when given access to any facilities, information, systems, infrastructure or personnel of the other Party or any of its Affiliates, conform to the policies and procedures of such other Party and any of its Affiliates, as applicable, concerning health, safety, conduct and security which are made known to the Party receiving such access from time to time.

Section 2.10 Performance. Any Party may cause any of its Subsidiaries to perform any or all of its obligations hereunder, and may designate any of its Subsidiaries to receive any of its entitlements hereunder. Each of the Parties shall cause to be performed, and hereby guarantees

the performance of, all actions, agreements and obligations set forth herein to be performed by any Subsidiary of such Party or by any entity that becomes a Subsidiary of such Party at or after the Distribution Effective Time, in each case to the extent such Subsidiary remains a Subsidiary of the applicable Party.

Section 2.11 Intellectual Property.

(a) Neither Party will gain, by virtue of this Agreement, any rights of ownership or use of copyrights, patents, trade secrets, trademarks, know-how or any other intellectual property rights ("Intellectual Property Rights") owned by the other Party or its Affiliates as of the Effective Date or that arise other than in the course of the performance of the Services. To the extent any Intellectual Property Rights are developed by bluebird or its Affiliates in the course of the performance of the Services that relate exclusively to the 2seventy Product Candidates or the Oncology Business (the "2seventy Intellectual Property Rights"), all right, title and interest in and to any such Intellectual Property Rights will be the sole and exclusive property of 2seventy, and bluebird shall (and shall cause its Affiliates to) assign, and does hereby assign, to 2seventy all right, title and interest in and to any such 2seventy Intellectual Property Rights. Except as expressly specified in the foregoing, as between the Parties, all right, title and interest in any Intellectual Property Rights developed by or on behalf of bluebird in the course of providing the Services will be owned by bluebird. To the extent that bluebird performs any Services through any Affiliate or subcontractor, bluebird shall obligate such Affiliate or such subcontractor to assign to 2seventy all 2seventy Intellectual Property Rights, and bluebird shall not utilize any such Affiliate or subcontractor in the performance of such Services unless such Affiliate or subcontractor is so obligated.

(b) Solely for and with respect to the performance of Services and other activities under this Agreement during the Term, 2seventy (on behalf of itself and its Affiliates) hereby grants to each Service Provider a non-exclusive, royalty-free, non-transferable license and right of reference, with the right to grant further licenses and rights of reference, to all intellectual property, regulatory submissions and approvals, and records included within the 2seventy Product Candidates that are necessary to perform the Services solely to perform such Services and other obligations of bluebird or a Service Provider under this Agreement.

Section 2.12 Migration Plan. The plan for the migration of Services from bluebird to 2seventy will be as set forth in the applicable Transition Service Schedules (collectively, the "Migration Plan"). During the Term, the Parties shall use commercially reasonable efforts to perform their respective obligations under the Migration Plan.

Section 2.13 Insurance. Each Party hereto shall, throughout the term of this Agreement, carry appropriate insurance with a reputable insurance company covering property

damage, business interruptions, automobile and general liability insurance (including contractual liability) to protect its own business and property interests; provided that each Party shall be permitted to reasonably self-insure against the liabilities specified in Article VIII.

ARTICLE III
FEES AND PAYMENT

Section 3.1 Fees. The fees payable hereunder for a Service (the "Fees") shall be set forth in the applicable Transition Service Schedule. 2seventy shall also pay the Service Provider for all of the reasonable, documented one-time costs and expenses, if any, incurred by the Service Provider in order to enable the Service Provider to provide and to terminate Services as contemplated hereby, including costs for adapting the Service Provider's systems to be able to interface with 2seventy's systems for provision of the Services, if reasonably required (the "One-Time Costs"); provided, however, that bluebird shall not incur any One-Time Cost (on an event-by-event basis) over five thousand dollars ($5,000) that is not specifically identified in a Transition Service Schedule without 2seventy's prior written consent, not to be unreasonably withheld, conditioned or delayed. The Parties agree that they have used reasonable good faith efforts to identify One-Time Costs in excess of five thousand dollars ($5,000) on the Transition Service Schedules as of the Distribution Effective Time and, in the event that 2seventy declines to consent to any One-Time Cost for a Service pursuant to this Section 3.1, Service Provider shall not be required under this Agreement to perform such Service to the extent such Service cannot be performed without payment of such One-Time Cost.

Section 3.2 Expense. The Fees are exclusive of expenses related to travel (including long-distance and local transportation, accommodation and meal expenses and other incidental expenses) by the Service Provider's personnel or any subcontractor in connection with performing the Services. All of the costs and expenses described in this Section 3.2 and any other out-of-pocket expenses set forth on the Transition Service Schedule for a particular Service (collectively, "Expenses") will be charged by the Service Provider to the recipient of such Service on a pass-through basis. For the avoidance of doubt, the Expenses described in this Section 3.2 will be consistent with the Service Provider's general approach with respect to such types of costs and expenses; provided that, with respect to any Service, the recipient of such Service's prior written approval will be required to the extent that Expenses exceed fifteen percent (15%) of the Fees paid and payable to the Service Provider for such Service in any calendar quarter. For clarity, there shall be no mark-up added to Expenses under this Agreement, unless such mark-up was actually paid by the Service Provider's personnel or subcontractor.

Section 3.3 Quarterly Statements. bluebird will furnish 2seventy with a preliminary statement within five (5) Business Days after the close of each calendar quarter and a final statement within ten (10) Business Days after the close of each calendar quarter, each such

statement to be in the form attached as Schedule 3.3 (each, a "Quarterly Statement"), which Quarterly Statement shall reflect bluebird's good faith estimate of, on a Service-by-Service basis: (a) the Fees payable for the Services provided by the Service Provider to 2seventy for the preceding calendar quarter; (b) any Expenses payable for the preceding calendar quarter; and (c) any One-Time Costs payable for the preceding calendar quarter, in each case as incurred in accordance with this Agreement.

Section 3.4 Invoice. Not later than twenty (20) days after the last day of each calendar quarter (or, if the Term ends during a calendar quarter, the last day of the Term), bluebird shall provide to 2seventy an invoice for the preceding calendar quarter, which will list (a) the Services provided by the Service Provider to 2seventy for the preceding calendar quarter, (b) the Fees payable for such Services (and reasonable documentation supporting such Fees, to the extent requested by 2seventy) for the preceding calendar quarter, (c) any Expenses (and reasonable documentation supporting such Expenses, to the extent requested by 2seventy) for the preceding calendar quarter, and (d) any One-Time Costs (and reasonable documentation supporting such costs and expenses, to the extent requested by 2seventy) for the preceding calendar quarter, in each case as incurred in accordance with this Agreement. 2seventy shall pay the amount stated in such invoices in full within thirty (30) days of the issuance of the invoices (or, if such date is not a Business Day, then on the immediately succeeding Business Day) to an account designated by bluebird, except to the extent such amount is the subject of a good faith dispute by 2seventy as notified in writing to bluebird.

Section 3.5 Late Payments. Without prejudice to the Service Provider's other rights and remedies, any amount not paid when due pursuant to this Agreement shall bear interest at a rate per annum equal to the Prime Rate, from time to time in effect, plus two percent (2%), calculated for the actual number of days elapsed, accrued from the date on which such payment was due up to the date of the actual receipt of payment. Notwithstanding the foregoing, if a Party contests any amounts due hereunder in good faith and promptly notifies the other Party of such dispute, interest will not accrue as to amounts being so contested until and unless the dispute is resolved in the payee Party's favor.

Section 3.6 Taxes. 2seventy shall make all payments to a Service Provider for any Service without deduction or withholding for taxes including income tax withholding, Value Added Tax ("VAT"), duties, sales tax or a similar tax except to the extent any such deduction or withholding is required by the tax laws of any federal, state, provincial or foreign government. In the event a deduction or withholding for taxes is applicable, 2seventy shall submit such deduction or withholding for taxes to the appropriate Governmental Entity and shall provide a tax certificate to Service Provider. In the event VAT or sales tax applies to the services provided, a Service Provider shall invoice such tax to 2seventy, as a reimbursable expense, and a Service Provider shall remit such tax to the relevant Governmental Entity. Service Provider and

2seventy shall mutually cooperate to minimize any amount of tax assessed in respect of the performance of Services hereunder or as a deduction or withholding of taxes, including through the prompt completion and filing of any relevant tax forms with the relevant tax authorities.

Section 3.7 Books and Records. Each Service Provider shall maintain complete and accurate books of account as necessary to support calculations of the Services rendered by it and related Fees, Expenses and One-Time Costs, and shall make such books available to 2seventy, upon reasonable notice, during normal business hours; provided, however, that to the extent such books contain information relating to any other aspect of the Service Provider's business, the Parties shall negotiate a procedure to provide 2seventy with necessary access while preserving the confidentiality of such other records.

Section 3.8 No Right to Set-Off. Each Party hereto acknowledges and agrees that it shall not be permitted to set-off any amount owed by such Party pursuant to this Agreement against any amount or obligation owed to such Party or an Affiliate hereunder or pursuant to the Separation Agreement or any other Ancillary Agreement.

ARTICLE IV
SERVICE MANAGEMENT

Section 4.1 Transition Committee. bluebird and 2seventy shall establish a transition committee that shall consist of an equal number of employees from each Party to have overall responsibility for managing and coordinating the delivery of Services in accordance with this Agreement (the "Transition Committee"). The initial members of the Transition Committee as of the Distribution Effective Time are identified on Schedule 4.1 hereto. The Transition Committee shall meet at least monthly at a mutually agreed time and location to review the status of the Services and discuss progress and strategy with respect to the Migration Plan. In addition, any member of the Transition Committee may request a meeting at any time, and such members of the Transition Committee shall use their commercially reasonable efforts to schedule and attend such meeting.

Section 4.2 Service Coordinators. Each Party has designated an employee or title as the key contact for the day-to-day implementation or monitoring of each Service as specified in the applicable Transition Service Schedule (each, a "Service Coordinator"). The Parties shall direct communications relating to specific Services to the applicable Service Coordinators. The Service Coordinators shall report to the Transition Committee from time to time, as directed by the members of the Transition Committee designated by the applicable Party.

ARTICLE V
SUB-CONTRACTING; THIRD PARTY AGREEMENTS

Section 5.1 Sub-Contractors. Upon 2seventy's consent, not to be unreasonably withheld, conditioned or delayed, a Service Provider may delegate or sub-contract its duties under this Agreement to a qualified Third Party; provided that, notwithstanding such delegation or sub-contracting, the Service Provider will remain liable for the performance of its duties hereunder and shall ensure and guaranty that any Services provided by a subcontractor shall meet Service Provider's obligations set forth in Section 2.2(i) and (ii). In the event any such consent is not granted, Service Provider shall not have any liability resulting from any delay in providing any such Service. For the avoidance of doubt, Service Provider will not be liable with respect to any agreement entered into directly by 2seventy (or its Affiliates) and a subcontractor, other than as mutually agreed in writing by the Parties hereto.

Section 5.2 Third Party Agreements. 2seventy acknowledges that the Services that were provided through Third Parties prior to the date hereof are subject to the terms and conditions of any applicable agreements between the Service Provider and such Third Parties, and 2seventy agrees to comply with such terms and conditions to the extent applicable to 2seventy and necessary for purposes of receiving such Services by 2seventy. For any Service to be delegated to a Third Party after the date hereof, and so long as any such Service is provided solely to 2seventy and not to a Service Provider or any Affiliates of Service Provider, the Service Provider shall provide 2seventy with a copy of any agreement contemplated to be entered into with such Third Party in relation to such Service and, as set forth in Section 5.1, seek 2seventy's consent to such delegation, which consent may not be unreasonably withheld, conditioned or delayed.

Section 5.3 Consents. Notwithstanding anything to the contrary contained herein, each Service Provider shall use commercially reasonable efforts to obtain all consents from vendors that are necessary in order to provide any of the Services to 2seventy under this Agreement; provided, however, that a Service Provider will not be required to pay any out-of-pocket fees to any vendor in order to obtain such consent, but will, instead, request that 2seventy pay such out-of-pocket fees. In the event that a Service Provider is unable to obtain any such consent, bluebird's sole liability and obligation and 2seventy's sole remedy will be to require the Parties hereto to work together to agree upon a commercially reasonable alternative arrangement, which may include identification of alternate resources and equivalent services from such alternative resources on commercially reasonable terms. Any costs specified in the second sentence of Section 3.1 and any actual out-of-pocket fees levied on a Service Provider (a) in connection with its efforts to obtain and implement such consents and (b) in connection with the implementation of any such commercially reasonable alternative arrangement, will be borne by

2seventy. For the avoidance of doubt, any costs incurred by a Service Provider in connection with obtaining consents prior to the Distribution Effective Time will be borne by bluebird.

ARTICLE VI
TERM AND TERMINATION AND EFFECTS OF TERMINATION

Section 6.1 Termination. Except as otherwise provided herein or unless otherwise agreed in writing by the Parties hereto, a Service Provider's obligation to provide or procure, and 2seventy's obligation to purchase, each Service shall cease as of the end of the term specified for such Service in the applicable Transition Service Schedule, and the Agreement will terminate in its entirety at the end of the Term; provided that (a) this Agreement may be extended, with respect to one or more Services, by mutual written agreement of the Parties, consent to which extension shall be in each Party's absolute discretion; provided that such extension shall be limited to one period of up to six (6) months following the initial term of the Service and (b) in the event that a Service shall not have been transitioned to 2seventy solely as a result of a material breach by bluebird of its obligations under this Agreement, the term for such Service will be extended solely for such period as shall be necessary for bluebird to cure such material breach; provided that the breach is curable with the use of commercially reasonable efforts and is not related to a Service that could reasonably be obtained or performed by 2seventy itself.

Section 6.2 Termination for Breach. In the event that a Party hereto commits a material breach with respect to any of the Services, the other Party may terminate this Agreement with respect to such Service only, unless such breach is cured not later than thirty (30) days after receipt by the breaching Party of written notice of such breach.

Section 6.3 Early Termination of a Service. Subject to the restrictions set forth herein, if 2seventy should wish to terminate a Service (in whole, but not in part), 2seventy shall provide written notice to the Service Provider not later than thirty (30) days prior to the requested termination date for such Service; provided, however, that no such notice of termination may be delivered to the Service Provider during the thirty (30) day period immediately following the date hereof. Notwithstanding the foregoing provisions, the Parties hereto acknowledge and agree that, in certain instances, terminating certain Services may require time periods longer than the thirty (30) day period specified in this Section 6.3. In any such event, the Parties agree to negotiate in good faith a longer period of time for any and all such transfers following the termination notice. 2seventy will remain liable for any Fees or other amounts payable hereunder in connection with the terminated Service(s) incurred prior to the effective date of termination of such Service(s), including in the event that such terminated Services contemplated a deliverable that was not provided due to such early termination. 2seventy acknowledges and agrees that (a) Services provided by Third Parties may be subject to term-limited licenses and contracts between a Service Provider and applicable Third Parties (collectively, "Provider Third Party

Contracts"), (b) the renewal periods under the Provider Third Party Contracts may be for fixed periods and (c) a Service Provider may not have the right to renew certain Provider Third Party Contracts. As a result, 2seventy agrees that (i) if Service Provider is required to extend any Provider Third Party Contract in order to continue to provide any Service during the Term, then Service Provider shall notify 2seventy and, if 2seventy informs Service Provider within twenty (20) days of such notice that it wishes to continue to receive such Service, then 2seventy shall be required to pay Service Provider the amount of any renewal fees or purchase commitments applicable to the relevant Service for the fixed renewal period specified in the applicable Provider Third Party Contract, regardless of whether the Term or Service Provider's provision of the relevant Service ends prior to the end of the relevant renewal period (provided that the Service Provider has used commercially reasonable efforts to negotiate a shorter period coterminous with the provision of the relevant Service) and (ii) a Service Provider shall not be required to provide any Service to the extent it is unable to renew any applicable Provider Third Party Contract or 2seventy either informs Service Provider that it does not wish to continue to receive such Service under this Section 6.3 or does not respond to Service Provider's notice in the applicable twenty (20) day period.

Section 6.4 Termination Upon Insolvency. Either Party may terminate this Agreement immediately in the event the other Party (a) becomes insolvent, (b) is generally unable to pay, or fails to pay, its debts as they become due, (c) files, or has filed against it, a petition for voluntary or involuntary bankruptcy or pursuant to any other insolvency Law, (d) makes or seeks to make a general assignment for the benefit of its creditors, or (e) applies for, or consents to, the appointment of a trustee, receiver or custodian for a substantial part of its property or business.

Section 6.5 Accrued Rights. Termination or expiration of this Agreement for any reason will be without prejudice to any rights that have accrued to the benefit of a Party prior to such termination or expiration. Such termination or expiration will not relieve a Party from obligations that are expressly indicated to survive the termination or expiration of this Agreement.

Section 6.6 Effect of Termination. Not later than thirty (30) days following the date it receives a final invoice from a Service Provider following termination or expiration of any Services or this Agreement, 2seventy shall pay to the Service Provider all remaining monies due to the Service Provider hereunder in respect of Services provided prior to such termination or expiration except for any amounts then the subject of a good faith dispute. In addition, at the end of the Term, each Party hereto shall, and shall cause any other Service Providers to, return or destroy, at the disclosing Party's option, the Confidential Information of the disclosing Party. In the event that the disclosing Party elects destruction, the other Party shall furnish to the disclosing Party a written certificate of destruction signed by an officer of the certifying Party. Any provision which by its nature should survive, including the provisions of this Section 6.6

(Effect of Termination), Section 2.11 (Intellectual Property), Article III (Fees and Payment), Article VII (Dispute Resolution), Article VIII (Limitation of Liability; Indemnification), Article IX (Confidentiality) and Article X (Miscellaneous), shall survive the termination of this Agreement.

ARTICLE VII
DISPUTE RESOLUTION

Section 7.1 Negotiation. A Party seeking resolution of a controversy, dispute or action arising out of, in connection with, or in relation to the interpretation, performance, nonperformance, validity or breach of this Agreement or otherwise arising out of, or in any way related to, this Agreement or the transactions contemplated hereby or thereby, including any action based on contract, tort, statute or constitution (collectively, "Disputes") shall provide written notice of such Dispute to the other Party, specifying the terms of such Dispute in reasonable detail ("Dispute Notice"). The Transition Committee shall attempt to resolve the Dispute through good faith negotiation for a reasonable period of time; provided that such reasonable period shall not, unless otherwise agreed by the Parties in writing, exceed thirty (30) days from the time of receipt by a Party of the Dispute Notice. If the Dispute has not been resolved within thirty (30) days after receipt of the Dispute Notice, the respective Chief Executive Officers or their respective designees (with full settlement authority) of bluebird and 2seventy shall meet in person (or where necessary, by phone) at a mutually acceptable time and, if applicable, place, and thereafter as often as they reasonably deem necessary, to attempt in good faith to resolve the Dispute. Any contractual time period or deadline under this Agreement to which such Dispute relates occurring after the Dispute Notice is received shall not be deemed to have passed until such Dispute has been resolved pursuant to this Article VII.

Section 7.2 Arbitration. Any Dispute that is not resolved pursuant to Section 7.1 within thirty (30) days after receipt of a Dispute Notice shall be resolved by final and binding arbitration pursuant to the procedures set forth in Section 8.2 of the Separation Agreement.

Section 7.3 Continuity of Service and Performance. Unless otherwise agreed in writing, the Parties shall continue to provide service and honor all other commitments under this Agreement during the course of a Dispute with respect to all matters not subject to such Dispute.

Section 7.4 Injunctive or Other Equity Relief. Nothing contained in this Agreement shall deny any Party the right to seek injunctive or other equitable relief in the context of a bona fide emergency or prospective irreparable harm, and such an action may be filed and maintained notwithstanding any ongoing arbitration proceeding; provided, however, that any other relief not expressly permitted under this Section 7.4 must be pursued in accordance with Section 7.2, with all remedies being cumulative to the extent allowed by applicable Law. The Parties further agree

that any action brought under this Section 7.4 shall be brought exclusively in the courts within the State of Delaware set forth in Section 10.12, and that such courts shall have personal jurisdiction over the Parties in such action.

ARTICLE VIII
LIMITATION OF LIABILITY; INDEMNIFICATION

Section 8.1 Limited Liability.

(a) The aggregate Liabilities of bluebird and its Affiliates and Representatives, collectively, under this Agreement for any act or failure to act in connection herewith (including the performance or breach of this Agreement), or from the sale, delivery, provision or use of any Services provided under or contemplated by this Agreement, whether in contract, tort (including negligence and strict liability) or otherwise, at law or equity, shall not exceed the aggregate amount paid and payable to bluebird and all other Service Providers under this Agreement.

(b) Notwithstanding anything to the contrary contained in the Separation Agreement or this Agreement, neither Party will be liable to the other Party or any of its Affiliates or Representatives, whether in contract, tort (including negligence and strict liability) or otherwise, at law or equity, for any special, indirect, incidental, punitive or consequential damages whatsoever (including lost profits or damages calculated on multiples of earnings approaches), which in any way arise out of, relate to or are a consequence of, the performance or nonperformance of this Agreement or the provision of, or failure to provide, any Services under this Agreement, regardless of whether such Party has been notified of the possibility of, or the foreseeability of, such damages.

(c) The limitations in this Section 8.1 will not apply with respect to any Liability arising out of, relating to or in connection with (i) any Third Party Claim to the extent a Party has an indemnification obligation to the other Party for such Liability under Section 8.3(a) or Section 8.3(b), (ii) any breach of Article IX or (iii) the gross negligence, willful misconduct or fraud of or by the Party to be charged.

Section 8.2 Services Provided "As-Is". EACH SERVICE PROVIDER PROVIDES ANY AND ALL SERVICES ON AN "AS-IS" BASIS AND, EXCEPT AS SET FORTH IN SECTION 2.2, MAKES NO REPRESENTATIONS OR WARRANTIES AS TO THE SERVICES PROVIDED. EACH SERVICE PROVIDER DISCLAIMS ALL IMPLIED WARRANTIES, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, IN CONNECTION WITH THIS AGREEMENT.

Section 8.3 Indemnification.

(a) Subject to Section 8.1, 2seventy hereby agrees to indemnify, defend and hold harmless bluebird and its Affiliates and Representatives from and against any and all Liabilities arising from, relating to or resulting from the use of any Services provided by bluebird or any member of its Group hereunder by 2seventy or any member of its Group, except to the extent such Liabilities arise out of bluebird's or another Service Provider's (i) breach of this Agreement, (ii) violation of Laws in providing such Services, or (iii) gross negligence or willful misconduct in providing such Services.

(b) Subject to Section 8.1, bluebird hereby agrees to indemnify, defend and hold harmless 2seventy and its Affiliates and Representatives from and against any and all Liabilities arising from, relating to or resulting from the provision of any Services by bluebird or any member of its Group hereunder to 2seventy or any member of its Group, to the extent such Liabilities result from bluebird's or another Service Provider's (i) breach of this Agreement, (ii) violation of Laws in providing such Services, or (iii) gross negligence or willful misconduct in providing such Services.

(c) The provisions of Section 6.4 of the Separation Agreement shall govern claims for indemnification under this Agreement; provided that, for purposes of this Section 8.3, in the event of any conflict between the provisions of Section 6.4 of the Separation Agreement and this Article VIII, the provisions of this Agreement shall control.

(d) Indemnification pursuant to this Section 8.3 represents the Parties' sole and exclusive remedy under this Agreement; provided that, if a Service Provider commits an error with respect to, incorrectly performs or fails to perform any Service, at 2seventy's request, without prejudice to any other rights or remedies 2seventy may have, the Service Provider shall use commercially reasonable efforts to correct such error, re-perform such Service or perform such Service, as applicable, at no additional cost to 2seventy. To the extent a Service Provider is unable to provide in its entirety a Service because of a partial delay which excuses performance pursuant to Section 10.6, the Service Provider shall allocate such resources and/or products as are then currently available to it and necessary for the performance of such Service ratably between the Service Provider for its own account and 2seventy for the performance of such Services hereunder. Nothing in this Article VIII shall be deemed to eliminate or limit, in any respect, either Party's express obligation in this Agreement to pay any fees, expenses or costs in accordance with the terms of this Agreement.

ARTICLE IX
CONFIDENTIALITY

Section 9.1 Confidentiality. The provisions of Sections 7.6 and 7.9 of the Separation Agreement will apply to disclosures of information made pursuant to this Agreement *mutatis mutandis*.

ARTICLE X
MISCELLANEOUS

Section 10.1 Complete Agreement; Construction. This Agreement, including the Schedules, together with the Separation Agreement and the other Ancillary Agreements, shall constitute the entire agreement between the Parties with respect to the subject matter hereof and shall supersede all previous negotiations, commitments, course of dealings and writings with respect to such subject matter. In the event and to the extent that there shall be a conflict or inconsistency between the provisions of this Agreement and any Schedule hereto, such Schedule shall control.

Section 10.2 Transaction Agreements. Except as expressly set forth herein, this Agreement is not intended to address, and should not be interpreted to address, the matters specifically and expressly covered by the other Transaction Agreements.

Section 10.3 Counterparts. This Agreement may be executed in one or more counterparts, all of which shall be considered one and the same agreement, and shall become effective when one or more such counterparts have been signed by each of the Parties and delivered to each of the Parties. Counterparts may be delivered via electronic mail (including pdf or any electronic signature complying with the U.S. federal ESIGN Act of 2000, e.g., www.docusign.com) or other transmission method and any counterpart so delivered shall be deemed to have been duly and validly delivered and be valid and effective for all purposes.

Section 10.4 Notices. All notices, requests, claims, demands and other communications under this Agreement shall be in writing and shall be given or made (and shall be deemed to have been duly given or made upon receipt) by delivery in person, by overnight courier service, by facsimile or email with receipt confirmed (followed by delivery of an original via overnight courier service) or by registered or certified mail (postage prepaid, return receipt requested) to the respective Parties at the following addresses (or at such other address for a Party as shall be specified in a notice given in accordance with this Section 10.4):

To bluebird:

bluebird bio, Inc.
60 Binney Street
Cambridge, MA 02142
Attn: General Counsel
Facsimile:
Email:

To 2seventy:

2seventy bio, Inc.
60 Binney Street
Cambridge, MA 02142
Attn: General Counsel
Facsimile:
Email:

Section 10.5 Waivers. The delay or failure of either Party to exercise or enforce any of its rights under this Agreement will not constitute, or be deemed to be, a waiver of those rights, nor will any single or partial exercise of any such rights preclude any other or further exercise thereof or the exercise of any other right. No waiver of any provision of this Agreement will be effective unless it is in writing and signed by the Party against which it is being enforced.

Section 10.6 Force Majeure.

(a) Neither Party hereto will be liable for delay in performance (other than the payment of money) of its obligations to the extent caused by events which could not have been foreseen and are beyond the reasonable control of the Party affected (an event of "Force Majeure"), including (i) acts of God, the elements, pandemics, epidemics, explosions, accidents, landslides, lightning, earthquakes, fires, storms (including tornadoes and hurricanes or tornado and hurricane warnings), sinkholes, floods or washouts; (ii) labor shortage or trouble including strikes or injunctions (whether or not within the reasonable control of such Party and provided that the settlement of strikes and other labor disputes shall be entirely within the discretion of the Party experiencing the difficulty); (iii) inability to obtain material, equipment or transportation; (iv) national defense requirements, war, blockades, insurrections, sabotage, terrorism, riots, arrests and restraints of the government, either federal or state, civil or military (including any governmental taking by eminent domain or otherwise); or (v) any changes in applicable Law, regulation or rule or the enforcement thereof by any Governmental Entity having jurisdiction, that limits or prevents a Party from performing its obligations hereunder or any notice from any

such Governmental Entity of its intention to fine or penalize such Party or otherwise impede or limit such Party's ability to perform its obligations hereunder.

(b) Each Service Provider shall endeavor to provide to 2seventy uninterrupted Services through the Term. In the event, however, that (i) the Service Provider is wholly or partially prevented from providing a Service or Services either temporarily or permanently by reason of any Force Majeure event, or (ii) the Service Provider, in the exercise of its reasonable good faith judgment, deems it necessary to suspend delivery of a Service hereunder for purposes of inspection, maintenance, repair, replacement of equipment parts or structures, or similar activities consistent with past practices, the Service Provider shall not be obligated to deliver the affected part of such Service during such periods, and, in the case of the immediately preceding clause (ii), the Service Provider shall cooperate with 2seventy with respect to the timing of such interruption. Notices provided under this Section 10.6 shall be provided to 2seventy's designees on the Transition Committee (or other executive designated in writing by 2seventy in accordance with Article IV) and may be provided in accordance with Article IV.

Section 10.7 Assignment. Except as provided herein, neither Party may assign any rights or delegate any obligations arising under this Agreement, in whole or in part, directly or indirectly, without the prior written consent of the other Party (such consent not to be unreasonably withheld, conditioned or delayed), and any attempt to so assign any rights or delegate any obligations arising under this Agreement without such consent shall be void. Notwithstanding the foregoing, no such consent shall be required for any such assignment or delegation (i) with respect to bluebird, to a Subsidiary of bluebird (so long as such Subsidiary remains a Subsidiary of bluebird), (ii) with respect to 2seventy, to a Subsidiary of 2seventy (so long as such Subsidiary remains a Subsidiary of 2seventy) or (iii) to a *bona fide* Third Party in connection with a merger, reorganization, consolidation or the sale of all or substantially all the assets of a Party so long as the resulting, surviving or transferee entity assumes all the obligations of the assigning Party by operation of Law or pursuant to an agreement in form and substance reasonably satisfactory to the non-assigning Party; provided, however, that in the case of each of the preceding clauses (i) and (ii), no assignment permitted by this Section 10.7 shall release the assigning Party from liability for the full performance of its obligations under this Agreement.

Section 10.8 Successors and Assigns. The provisions of this Agreement and the obligations and rights hereunder shall be binding upon, inure to the benefit of and be enforceable by (and against) the Parties and their respective successors (whether by merger, acquisition of assets or otherwise) and permitted assigns.

Section 10.9 Third Party Beneficiaries. Except as provided in Section 8.3 with respect to Persons entitled to claim indemnification hereunder, this Agreement is solely for the benefit of the Parties and shall not be deemed to confer upon any Person other than the Parties any remedy,

claim, liability, reimbursement, cause of Action or other right beyond any that exist without reference to this Agreement.

Section 10.10 Titles and Headings. Titles and headings to sections herein are inserted for the convenience of reference only and are not intended to be a part of or to affect the meaning or interpretation of this Agreement.

Section 10.11 Schedules. The Schedules will be construed with and as an integral part of this Agreement to the same extent as if the same had been set forth verbatim herein.

Section 10.12 Governing Law. This Agreement will be governed by, construed and interpreted in accordance with the Laws of the State of Delaware, without reference to principles of conflicts of Laws. Each Party irrevocably consents to the exclusive jurisdiction, forum and venue of the Delaware Court of Chancery (and if the Delaware Court of Chancery shall be unavailable, any Delaware State court or the federal court sitting in the State of Delaware) over any and all claims, disputes, controversies or disagreements between the Parties under or related to this Agreement or any of the transactions contemplated hereby, including their execution, performance or enforcement, whether in contract, tort or otherwise. Each of the Parties hereby agrees that it shall not assert, and shall hereby waive, any claim or right or defense that it is not subject to the jurisdiction of such courts, that the venue is improper, that the forum is inconvenient or any similar objection, claim or argument.

Section 10.13 Severability. In the event any one or more of the provisions contained in this Agreement should be held invalid, illegal or unenforceable in any respect, the validity, legality and enforceability of the remaining provisions contained herein and therein shall not in any way be affected or impaired thereby. The Parties shall endeavor in good-faith negotiations to replace the invalid, illegal or unenforceable provisions with valid provisions, the economic effect of which comes as close as possible to that of the invalid, illegal or unenforceable provisions.

Section 10.14 Interpretation. Interpretation of this Agreement shall be governed by the following rules of construction: (a) words in the singular shall be held to include the plural and vice versa, and words of one gender shall be held to include the other gender as the context requires; (b) references to the terms “Section,” “paragraph,” “clause,” “Exhibit” and “Schedule” are references to the Sections, paragraphs, clauses, Exhibits and Schedules of this Agreement unless otherwise specified; (c) the terms “hereof,” “herein,” “hereby,” “hereto,” and derivative or similar words refer to this entire Agreement, including the Schedules and Exhibits hereto; (d) references to “$” shall mean U.S. dollars; (e) the word “including” and words of similar import when used in this Agreement shall mean “including without limitation,” unless otherwise specified; (f) the word “or” shall not be exclusive; (g) references to “written” or “in writing” include in electronic form; (h) unless the context requires otherwise, references to “Party” shall

mean bluebird or 2seventy, as appropriate, and references to "Parties" shall mean bluebird and 2seventy; (i) provisions shall apply, when appropriate, to successive events and transactions; (j) the table of contents and headings contained in this Agreement are for reference purposes only and shall not affect in any way the meaning or interpretation of this Agreement; (k) bluebird and 2seventy have each participated in the negotiation and drafting of this Agreement and if an ambiguity or question of interpretation should arise, this Agreement shall be construed as if drafted jointly by the parties and no presumption or burden of proof shall arise favoring or burdening either party by virtue of the authorship of any of the provisions in this Agreement or any interim drafts of this Agreement; and (l) a reference to any Person includes such Person's successors and permitted assigns.

Section 10.15 No Duplication; No Double Recovery. Nothing in this Agreement, the Separation Agreement or any other Ancillary Agreement is intended to confer to or impose upon any Party a duplicative right, entitlement, obligation or recovery with respect to any matter arising out of the same facts and circumstances.

Section 10.16 Independent Contractor Status. Each Service Provider will be deemed to be an independent contractor to 2seventy. Nothing contained in this Agreement will create or be deemed to create the relationship of employer and employee between the Service Provider and 2seventy. The relationship created between the Service Provider and 2seventy pursuant to or by this Agreement is not and will not be one of partnership or joint venture. No Party to this Agreement will, by reason hereof, be deemed to be a partner or a joint venture of the other Party hereto in the conduct of their respective businesses and/or the conduct of the activities contemplated by this Agreement. Except as specifically and explicitly provided in this Agreement, and subject to and in accordance with the provisions hereof, no Party to this Agreement is now, will become, or will be deemed to be an agent or representative of the other Party. Except as herein explicitly and specifically provided, neither Party shall have any authority or authorization, of any nature whatsoever, to speak for or bind the other Party to this Agreement.

[Signature Page Follows]

IN WITNESS WHEREOF, the Parties have caused this Agreement to be duly executed as of the day and year first above written.

BLUEBIRD BIO, INC.

By: /s/ Andrew Obenshain
Name: Andrew Obenshain
Title: President, Severe Genetic Diseases

2SEVENTY BIO INC.

By: /s/ Nick Leschly
Name: Nick Leschly
Title: President

TRANSITION SERVICES AGREEMENT

by and between

2SEVENTY BIO, INC.

and

BLUEBIRD BIO, INC.

Dated as of November 3, 2021

TRANSITION SERVICES AGREEMENT
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TRANSITION SERVICES AGREEMENT

This TRANSITION SERVICES AGREEMENT (this "Agreement"), dated as of November 3, 2021 (the "Effective Date"), is entered into by and between 2seventy bio, Inc. ("2seventy"), a Delaware corporation, and bluebird bio, Inc. ("bluebird"), a Delaware corporation. "Party" or "Parties" means 2seventy or bluebird, individually or collectively, as the case may be. Capitalized terms used and not defined herein shall have the meaning set forth in the Separation Agreement between the Parties, dated as of November 3, 2021 (the "Separation Agreement").

W I T N E S S E T H:

WHEREAS, in conjunction with the Separation Agreement and the consummation of the transactions contemplated thereby, bluebird desires to obtain certain transition services from 2seventy, and 2seventy is willing to provide such services to bluebird on the terms and conditions set forth in this Agreement; and

WHEREAS, the Parties acknowledge that the efficient and effective transition of certain services under this Agreement in a manner that permits the successful operations of each Party following the Separation is a priority to the stockholders of each Party.

NOW, THEREFORE, in consideration of the foregoing and the mutual agreements, provisions and covenants contained in this Agreement, the Parties hereby agree as follows:

ARTICLE I
DEFINITIONS

Section 1.1 General. As used herein, the following terms have the following meanings:

(1) "bluebird Intellectual Property Rights" shall have the meaning set forth in Section 2.11(a).

(2) "Additional Service" shall have the meaning set forth in Section 2.6.

(3) "Dispute Notice" shall have the meaning set forth in Section 7.1.

(4) "Disputes" shall have the meaning set forth in Section 7.1.

(5) "Expenses" shall have the meaning set forth in Section 3.2.

(6) "Fees" shall have the meaning set forth in Section 3.1.

(7) "Force Majeure" shall have the meaning set forth in Section 11.6(a).

(8) "Information System Additions" shall have the meaning set forth in Section 2.3(b).

(9) "Intellectual Property Rights" shall have the meaning set forth in Section 2.11(a).

(10) "IT Acceptable Use Policy" shall have the meaning set forth in Section 2.3(a).

(11) "Migration Plan" shall have the meaning set forth in Section 2.12.

(12) "Omitted Service" shall have the meaning set forth in Section 2.5.

(13) "One-Time Costs" shall have the meaning set forth in Section 3.1.

(14) "Prior Period" shall have the meaning set forth in Section 2.2.

(15) "Provider Third Party Contracts" shall have the meaning set forth in Section 6.3.

(16) "Quarterly Statement" shall have the meaning set forth in Section 3.3.

(17) "Service Coordinator" shall have the meaning set forth in Section 4.2.

(18) "Service Provider" means, as the context may require, 2seventy or, if not 2seventy, the Person providing the Services on behalf of 2seventy, including any of its Affiliates (it being agreed and understood that, for purposes of this Agreement, 2seventy shall cause each such Person to comply with the provisions of this Agreement applicable to such Person in such Person's capacity as a "Service Provider").

(19) "Services" means (a) all of the services to be provided by or on behalf of a Service Provider under this Agreement, each as described on a Transition Service Schedule as such Transition Service Schedule may be updated and supplemented from time to time in accordance with the provisions of this Agreement, (b) any Omitted Services and (c) any Additional Services. "Service" means each such service.

(20) "Shared Real Property" shall have the meaning set forth in Section 9.1.

(21) "Term" means the period commencing upon the Distribution Effective Time and ending, subject to Section 6.1, upon the earlier of (i) the expiration of all Services set forth in the Transition Service Schedules and (ii) the second (2^{nd}) anniversary of the Distribution Date.

(22) "Third Party" means any person or entity other than 2seventy, bluebird or their Affiliates.

(23) "Third Party Costs" means the price paid by 2seventy or its Affiliates to a Third Party (not in its capacity as a Service Provider) for all applicable Services provided by such Third Party to 2seventy or its Affiliates that are directly allocable to the provision of Services hereunder. For clarity, there shall be no mark-up added to Third Party Costs under this Agreement, unless such mark-up was actually paid by 2seventy or its Affiliates to a Third Party.

(24) "Transition Committee" shall have the meaning set forth in Section 4.1.

(25) "Transition Service Schedule" means a transition service schedule in the form attached hereto as Schedule 1.1, as mutually agreed upon by the Parties with respect to each Service to be provided hereunder.

(26) "VAT" shall have the meaning set forth in Section 3.6.

ARTICLE II
SERVICES

Section 2.1 General. During the Term, subject to Section 2.2, 2seventy shall (and shall cause each Service Provider providing Services to) provide to bluebird and, to the extent directed by bluebird, its Affiliates, the Services, in each case subject to the terms and conditions set forth herein and on the applicable Transition Service Schedule. Notwithstanding anything to the contrary herein, a Service Provider shall not be required to perform or cause to be performed any of the Services for the benefit of any Person other than bluebird and its Affiliates. The Parties agree to negotiate in good faith any proposed changes to the Services, including pricing related thereto, during the Term. Such proposed changes will become effective only upon mutual agreement of the Parties as reflected in a Transition Service Schedule. If there is any inconsistency between the terms of a Transition Service Schedule and the terms of this Agreement, the terms of this Agreement will govern. The Parties acknowledge and agree that the Services are generally intended to facilitate the transactions contemplated by the Separation Agreement, and, to the extent Services described in any Transition Service Schedule are general in nature, are solely intended to support the continued operation of the Severe Genetic Disease Business.

Section 2.2 Standard for Services. 2seventy shall use commercially reasonable efforts to provide, or cause to be provided, to bluebird the Services in accordance with the terms and conditions of this Agreement. 2seventy shall provide, or cause to be provided, the Services in a manner (i) in compliance in all material respects with all applicable Laws and (ii) generally consistent with the provision of the Services to the Severe Genetic Disease Business during the twelve (12) months immediately prior to the date hereof (the "Prior Period"); provided that if a Service Provider has not previously provided a Service to another Person, the Service Provider

shall provide such Service in a manner generally consistent with the provision of similar services provided to its Affiliates or businesses. To the extent a more specific standard of care is specified in a Transition Service Schedule with respect to any Service, a Service Provider shall use its commercially reasonable efforts to comply with such more specific standard. It is the Parties' shared objective to transition responsibility for the performance of all Services from Service Provider to bluebird and its Affiliates in a manner that minimizes, to the extent reasonably possible, disruption to the business operations of the Service Providers and their Affiliates and the business operations of bluebird and its Affiliates. Notwithstanding any provision of this Agreement or the Separation Agreement to the contrary, no Service Provider shall be required to (a) perform any Service in any manner that violates or contravenes any restrictions imposed on the Service Provider by applicable Law, (b) perform any Service in any manner that breaches or contravenes any contractual obligations owed by the Service Provider to any Third Party(ies) or (c) perform any Service to the extent that the conduct of such would, in the good faith belief of such Service Provider, infringe, violate or misappropriate intellectual property rights of any Third Party. Notwithstanding any provision of this Agreement to the contrary, but without limiting a Service Provider's obligations under Section 2.1 or this Section 2.2, in no event shall 2seventy or any of its Affiliates be: (i) obligated to make any specific employment decisions in terms of hiring, retaining or terminating employees; (ii) obligated to enter into retention agreements with employees or otherwise provide any incentive beyond payment of regular salary and benefits; (iii) prevented from transferring after the Distribution Effective Time any employees who were supporting the Severe Genetic Disease Business as of the Distribution Effective Time to support other products for 2seventy or its Affiliates or to assume other roles with 2seventy or its Affiliates to the extent such employees are not required to provide Services; (iv) prevented from determining, in its sole discretion, the individual employees or contractors who provide Services or from terminating or otherwise disciplining employees; (v) obligated to purchase, lease or license any additional equipment or software, except as specifically provided for in a Transition Service Schedule; or (vi) obligated to create or supply any documentation or information not currently existing or reasonably available, except as specifically provided for in a Transition Service Schedule.

Section 2.3 Protection of 2seventy Information Systems.

(a) In providing information technology Services to bluebird, 2seventy shall have the right to implement reasonable processes from time to time under which there will be no greater threat to 2seventy's information technology operating environment than would exist in the absence of the provision of such Services. Without limiting the foregoing, bluebird shall, and shall cause each of its employees with access to 2seventy's information technology operating environment to, comply with the terms and conditions of the applicable 2seventy policy set forth in Schedule 2.3 hereunder as may be amended from time to time upon written notice by 2seventy

to bluebird (such policy, the "IT Acceptable Use Policy"), and with the terms of any 2seventy restrictive covenant agreement, except as expressly waived by 2seventy.

(b) If, in connection with the provision of any Services under this Agreement, it is reasonably necessary for 2seventy to implement any information technology connections, firewalls or the like ("Information System Additions") specifically in connection with the provision of such Services and that would not have otherwise been implemented in the absence of the provision of the Services, the costs of implementing such Information System Additions shall be borne by bluebird, unless specifically provided otherwise in a Transition Service Schedule or otherwise agreed to in writing by 2seventy.

Section 2.4 Transitional Nature of the Services; Changes.

(a) bluebird understands that the Services provided hereunder are transitional in nature and are furnished by the Service Providers as an accommodation and for the purpose of facilitating the transactions contemplated by the Separation Agreement. Each of the Parties agrees to cooperate in good faith and use, and shall cause its Affiliates to use, commercially reasonable efforts to effect a smooth transition from the Services as provided by the Service Provider to services performed by bluebird or furnished by another party as soon as practically possible, but in no case later than the expiration of the Term. bluebird further understands that the Service Providers are not in the business of providing Services to Third Parties and shall not provide Services beyond the Term.

(b) bluebird acknowledges and agrees that 2seventy or its Affiliates may make changes from time to time in the manner of performing the Services if 2seventy or its Affiliates: (i) are making similar changes in the performance of similar services for itself or their own Affiliates; (ii) furnish to bluebird notice with respect to such changes, and if applicable, substantially the same notice (in content and timing) as 2seventy or its Affiliates shall furnish to their own Affiliates with respect to such changes; and (iii) considers in good faith any reasonable concerns of bluebird provided in writing related to implementing any such changes.

Section 2.5 Omitted Services. If, during the sixty (60) day period immediately following the date of this Agreement, either Party identifies a service that was provided in connection with the Severe Genetic Disease Business (other than those services expressly excluded hereunder) during the Prior Period, or which are reasonably anticipated as of the date hereof to be necessary to continue to support the Severe Genetic Disease Business during the Term, but such services were inadvertently omitted from the Transition Service Schedules (each, to the extent included in the Services pursuant to this Section, an "Omitted Service") and notifies the other Party thereof, then the Parties shall enter into good faith discussions as to whether such Omitted Service should be added as a Service hereunder, taking into account considerations such

as whether the provision of such Service would be commercially reasonable from Service Provider's perspective and whether the Omitted Service can be obtained from a provider other than the Service Provider at comparable or lower expense. If the Parties determine that an Omitted Service will be provided under this Agreement, then the Parties shall cooperate in preparing a Transition Service Schedule to add such Omitted Service as a Service; provided that, notwithstanding anything to the contrary in this Agreement, Service Provider shall not be obligated to provide any Omitted Service if it does not, in its reasonable judgment, have adequate resources to provide such Omitted Service or if the provision of such Omitted Service would significantly disrupt the operation of its business. In the event that the Parties agree that a Service Provider should provide any such Omitted Service, the Parties shall execute a Transition Service Schedule for such Omitted Service that will set forth, among other things, (a) the time period during which such Omitted Service will be provided, (b) a description of such Omitted Service in reasonable detail, (c) primary points of contact for each of the Parties with respect to the Service, (d) any costs related to such Omitted Service and agreed upon by the Parties, and (e) any additional terms and conditions specific to such Omitted Service. A Service Provider's obligations with respect to providing any such Omitted Service shall become effective only upon mutual agreement of the Parties as reflected in such Transition Service Schedule. Notwithstanding the foregoing, the time period for any such Omitted Service will expire not later than the expiration of the Term as calculated prior to the addition of such Omitted Service unless the Parties mutually agree otherwise.

Section 2.6 Additional Services. The Parties hereto acknowledge that the Transition Service Schedules might not identify all of the Services that, although not provided in connection with the Severe Genetic Disease Business during the Prior Period, may be necessary or appropriate to effect the understanding set forth in this Agreement. bluebird may request such additional Services from a Service Provider (each, to the extent included in the Services pursuant to this Section 2.6, an "Additional Service") in writing during the Term. A Service Provider shall consider any such request for Additional Services promptly and in good faith, except to the extent such request is for Omitted Services (in which case Section 2.5 shall govern) or for services intentionally not included by mutual agreement of the Parties as part of the Services as of the Effective Date. In the event that the Parties agree that a Service Provider should provide any such Additional Service, the Parties shall execute a Transition Service Schedule that will set forth, among other things, (a) the time period during which such Additional Service will be provided, (b) a description of such Additional Service in reasonable detail, (c) primary points of contact for each of the Parties with respect to the Service, (d) any costs related to such Additional Service and agreed upon by the Parties, and (e) any additional terms and conditions specific to such Additional Service. A Service Provider's obligations with respect to providing any such Additional Service will become effective only upon mutual agreement of the Parties as reflected in such Transition Service Schedule. Notwithstanding the foregoing, the time period for any

such Additional Service will expire not later than the expiration of the Term as calculated prior to the addition of such Additional Service unless the Parties mutually agree otherwise.

Section 2.7 Use of Third Parties. bluebird understands that certain Services may be provided to it by a Service Provider pursuant to agreements between the Service Provider and various Third Parties. To the extent not prohibited by a Third Party and with bluebird's consent (not to be unreasonably withheld, conditioned or delayed), the Service Provider shall coordinate the provision of Services by the Third Party to bluebird, and bluebird shall reasonably cooperate with any Third Party providing Services on behalf of the Service Provider in order to facilitate the provision and receipt of such Services.

Section 2.8 Cooperation. bluebird and its Affiliates who are recipients of the Services shall reasonably cooperate with each Service Provider in order to facilitate the provision and receipt of the Services. bluebird acknowledges that such Services are dependent on such reasonable cooperation, and that its or its Affiliates' failure to so cooperate, if not reasonable, will relieve the Service Provider of its obligation to provide the related Services to the extent such failure renders such provision impractical or impossible. bluebird and its Affiliates who are recipients of the Services shall comply in all material respects with all applicable policies and procedures of the Service Provider.

Section 2.9 Location of Services Provided; Access. Each Service Provider shall provide the Services to bluebird from locations of the Service Provider's choice in its sole discretion unless Services are required to be performed at a specific location identified in a Transition Service Schedule. Certain key personnel of the Service Providers who are expected to be utilized to perform Services may be required to travel to the offices of bluebird or between Service Provider locations. Each Party shall allow the other Party and its Affiliates and Representatives reasonable access to the facilities of such Party and its Affiliates that is necessary for each Service Provider to provide Services or for bluebird and its Affiliates to receive the Services in accordance with this Agreement, subject to applicable confidentiality and non-use restrictions consistent with those set forth in this Agreement. Each Party agrees that all of its and its Affiliates' employees shall, and that it shall use commercially reasonable efforts to cause its Representatives' employees to, when on the property of the other Party or any of its Affiliates, or when given access to any facilities, information, systems, infrastructure or personnel of the other Party or any of its Affiliates, conform to the policies and procedures of such other Party and any of its Affiliates, as applicable, concerning health, safety, conduct and security which are made known to the Party receiving such access from time to time.

Section 2.10 Performance. Any Party may cause any of its Subsidiaries to perform any or all of its obligations hereunder, and may designate any of its Subsidiaries to receive any of its entitlements hereunder. Each of the Parties shall cause to be performed, and hereby guarantees

the performance of, all actions, agreements and obligations set forth herein to be performed by any Subsidiary of such Party or by any entity that becomes a Subsidiary of such Party at or after the Distribution Effective Time, in each case to the extent such Subsidiary remains a Subsidiary of the applicable Party.

Section 2.11 Intellectual Property.

(a) Neither Party will gain, by virtue of this Agreement, any rights of ownership or use of copyrights, patents, trade secrets, trademarks, know-how or any other intellectual property rights ("Intellectual Property Rights") owned by the other Party or its Affiliates as of the Effective Date or that arise other than in the course of the performance of the Services. To the extent any Intellectual Property Rights are developed by 2seventy or its Affiliates in the course of the performance of the Services that relate exclusively to the bluebird Product Candidates or the Severe Genetic Disease Business (the "bluebird Intellectual Property Rights"), all right, title and interest in and to any such Intellectual Property Rights will be the sole and exclusive property of bluebird, and 2seventy shall (and shall cause its Affiliates to) assign, and does hereby assign, to bluebird all right, title and interest in and to any such bluebird Intellectual Property Rights. Except as expressly specified in the foregoing, as between the Parties, all right, title and interest in any Intellectual Property Rights developed by or on behalf of 2seventy in the course of providing the Services will be owned by 2seventy. To the extent that 2seventy performs any Services through any Affiliate or subcontractor, 2seventy shall obligate such Affiliate or such subcontractor to assign to bluebird all bluebird Intellectual Property Rights, and 2seventy shall not utilize any such Affiliate or subcontractor in the performance of such Services unless such Affiliate or subcontractor is so obligated.

(b) Solely for and with respect to the performance of Services and other activities under this Agreement during the Term, bluebird (on behalf of itself and its Affiliates) hereby grants to each Service Provider a non-exclusive, royalty-free, non-transferable license and right of reference, with the right to grant further licenses and rights of reference, to all intellectual property, regulatory submissions and approvals, and records included within the bluebird Product Candidates that are necessary to perform the Services solely to perform such Services and other obligations of 2seventy or a Service Provider under this Agreement.

Section 2.12 Migration Plan. The plan for the migration of Services from 2seventy to bluebird will be as set forth in the applicable Transition Service Schedules (collectively, the "Migration Plan"). During the Term, the Parties shall use commercially reasonable efforts to perform their respective obligations under the Migration Plan.

Section 2.13 Insurance. Each Party hereto shall, throughout the term of this Agreement, carry appropriate insurance with a reputable insurance company covering property

damage, business interruptions, automobile and general liability insurance (including contractual liability) to protect its own business and property interests; provided that each Party shall be permitted to reasonably self-insure against the liabilities specified in Article VIII.

ARTICLE III
FEES AND PAYMENT

Section 3.1 Fees. The fees payable hereunder for a Service (the "Fees") shall be set forth in the applicable Transition Service Schedule. bluebird shall also pay the Service Provider for all of the reasonable, documented one-time costs and expenses, if any, incurred by the Service Provider in order to enable the Service Provider to provide and to terminate Services as contemplated hereby, including costs for adapting the Service Provider's systems to be able to interface with bluebird's systems for provision of the Services, if reasonably required (the "One-Time Costs"); provided, however, that 2seventy shall not incur any One-Time Cost (on an event-by-event basis) over five thousand dollars ($5,000) that is not specifically identified in a Transition Service Schedule without bluebird's prior written consent, not to be unreasonably withheld, conditioned or delayed. The Parties agree that they have used reasonable good faith efforts to identify One-Time Costs in excess of five thousand dollars ($5,000) on the Transition Service Schedules as of the Distribution Effective Time and, in the event that bluebird declines to consent to any One-Time Cost for a Service pursuant to this Section 3.1, Service Provider shall not be required under this Agreement to perform such Service to the extent such Service cannot be performed without payment of such One-Time Cost.

Section 3.2 Expense. The Fees are exclusive of expenses related to travel (including long-distance and local transportation, accommodation and meal expenses and other incidental expenses) by the Service Provider's personnel or any subcontractor in connection with performing the Services. All of the costs and expenses described in this Section 3.2 and any other out-of-pocket expenses set forth on the Transition Service Schedule for a particular Service (collectively, "Expenses") will be charged by the Service Provider to the recipient of such Service on a pass-through basis. For the avoidance of doubt, the Expenses described in this Section 3.2 will be consistent with the Service Provider's general approach with respect to such types of costs and expenses; provided that, with respect to any Service, the recipient of such Service's prior written approval will be required to the extent that Expenses exceed fifteen percent (15%) of the Fees paid and payable to the Service Provider for such Service in any calendar quarter. For clarity, there shall be no mark-up added to Expenses under this Agreement, unless such mark-up was actually paid by the Service Provider's personnel or subcontractor.

Section 3.3 Quarterly Statements. 2seventy will furnish bluebird with a preliminary statement within five (5) Business Days after the close of each calendar quarter and a final statement within ten (10) Business Days after the close of each calendar quarter, each such

statement to be in the form attached as Schedule 3.3 (each, a "Quarterly Statement"), which Quarterly Statement shall reflect 2seventy's good faith estimate of, on a Service-by-Service basis: (a) the Fees payable for the Services provided by the Service Provider to bluebird for the preceding calendar quarter; (b) any Expenses payable for the preceding calendar quarter; and (c) any One-Time Costs payable for the preceding calendar quarter, in each case as incurred in accordance with this Agreement.

Section 3.4 Invoice. Not later than twenty (20) days after the last day of each calendar quarter (or, if the Term ends during a calendar quarter, the last day of the Term), 2seventy shall provide to bluebird an invoice for the preceding calendar quarter, which will list (a) the Services provided by the Service Provider to bluebird for the preceding calendar quarter, (b) the Fees payable for such Services (and reasonable documentation supporting such Fees, to the extent requested by bluebird) for the preceding calendar quarter, (c) any Expenses (and reasonable documentation supporting such Expenses, to the extent requested by bluebird) for the preceding calendar quarter, and (d) any One-Time Costs (and reasonable documentation supporting such costs and expenses, to the extent requested by bluebird) for the preceding calendar quarter, in each case as incurred in accordance with this Agreement. bluebird shall pay the amount stated in such invoices in full within thirty (30) days of the issuance of the invoices (or, if such date is not a Business Day, then on the immediately succeeding Business Day) to an account designated by 2seventy, except to the extent such amount is the subject of a good faith dispute by bluebird as notified in writing to 2seventy.

Section 3.5 Late Payments. Without prejudice to the Service Provider's other rights and remedies, any amount not paid when due pursuant to this Agreement shall bear interest at a rate per annum equal to the Prime Rate, from time to time in effect, plus two percent (2%), calculated for the actual number of days elapsed, accrued from the date on which such payment was due up to the date of the actual receipt of payment. Notwithstanding the foregoing, if a Party contests any amounts due hereunder in good faith and promptly notifies the other Party of such dispute, interest will not accrue as to amounts being so contested until and unless the dispute is resolved in the payee Party's favor.

Section 3.6 Taxes. bluebird shall make all payments to a Service Provider for any Service without deduction or withholding for taxes including income tax withholding, Value Added Tax ("VAT"), duties, sales tax or a similar tax except to the extent any such deduction or withholding is required by the tax laws of any federal, state, provincial or foreign government. In the event a deduction or withholding for taxes is applicable, bluebird shall submit such deduction or withholding for taxes to the appropriate Governmental Entity and shall provide a tax certificate to Service Provider. In the event VAT or sales tax applies to the services provided, a Service Provider shall invoice such tax to bluebird, as a reimbursable expense, and a Service Provider shall remit such tax to the relevant Governmental Entity. Service Provider and

bluebird shall mutually cooperate to minimize any amount of tax assessed in respect of the performance of Services hereunder or as a deduction or withholding of taxes, including through the prompt completion and filing of any relevant tax forms with the relevant tax authorities.

Section 3.7 Books and Records. Each Service Provider shall maintain complete and accurate books of account as necessary to support calculations of the Services rendered by it and related Fees, Expenses and One-Time Costs, and shall make such books available to bluebird, upon reasonable notice, during normal business hours; provided, however, that to the extent such books contain information relating to any other aspect of the Service Provider's business, the Parties shall negotiate a procedure to provide bluebird with necessary access while preserving the confidentiality of such other records.

Section 3.8 No Right to Set-Off. Each Party hereto acknowledges and agrees that it shall not be permitted to set-off any amount owed by such Party pursuant to this Agreement against any amount or obligation owed to such Party or an Affiliate hereunder or pursuant to the Separation Agreement or any other Ancillary Agreement.

ARTICLE IV
SERVICE MANAGEMENT

Section 4.1 Transition Committee. 2seventy and bluebird shall establish a transition committee that shall consist of an equal number of employees from each Party to have overall responsibility for managing and coordinating the delivery of Services in accordance with this Agreement (the "Transition Committee"). The initial members of the Transition Committee as of the Distribution Effective Time are identified on Schedule 4.1 hereto. The Transition Committee shall meet at least monthly at a mutually agreed time and location to review the status of the Services and discuss progress and strategy with respect to the Migration Plan. In addition, any member of the Transition Committee may request a meeting at any time, and such members of the Transition Committee shall use their commercially reasonable efforts to schedule and attend such meeting.

Section 4.2 Service Coordinators. Each Party has designated an employee or title as the key contact for the day-to-day implementation or monitoring of each Service as specified in the applicable Transition Service Schedule (each, a "Service Coordinator"). The Parties shall direct communications relating to specific Services to the applicable Service Coordinators. The Service Coordinators shall report to the Transition Committee from time to time, as directed by the members of the Transition Committee designated by the applicable Party.

ARTICLE V
SUB-CONTRACTING; THIRD PARTY AGREEMENTS

Section 5.1 Sub-Contractors. Upon bluebird's consent, not to be unreasonably withheld, conditioned or delayed, a Service Provider may delegate or sub-contract its duties under this Agreement to a qualified Third Party; provided that, notwithstanding such delegation or sub-contracting, the Service Provider will remain liable for the performance of its duties hereunder and shall ensure and guaranty that any Services provided by a subcontractor shall meet Service Provider's obligations set forth in Section 2.2(i) and (ii). In the event any such consent is not granted, Service Provider shall not have any liability resulting from any delay in providing any such Service. For the avoidance of doubt, Service Provider will not be liable with respect to any agreement entered into directly by bluebird (or its Affiliates) and a subcontractor, other than as mutually agreed in writing by the Parties hereto.

Section 5.2 Third Party Agreements. bluebird acknowledges that the Services that were provided through Third Parties prior to the date hereof are subject to the terms and conditions of any applicable agreements between the Service Provider and such Third Parties, and bluebird agrees to comply with such terms and conditions to the extent applicable to bluebird and necessary for purposes of receiving such Services by bluebird. For any Service to be delegated to a Third Party after the date hereof, and so long as any such Service is provided solely to bluebird and not to a Service Provider or any Affiliates of Service Provider, the Service Provider shall provide bluebird with a copy of any agreement contemplated to be entered into with such Third Party in relation to such Service and, as set forth in Section 5.1, seek bluebird's consent to such delegation, which consent may not be unreasonably withheld, conditioned or delayed.

Section 5.3 Consents. Notwithstanding anything to the contrary contained herein, each Service Provider shall use commercially reasonable efforts to obtain all consents from vendors that are necessary in order to provide any of the Services to bluebird under this Agreement; provided, however, that a Service Provider will not be required to pay any out-of-pocket fees to any vendor in order to obtain such consent, but will, instead, request that bluebird pay such out-of-pocket fees. In the event that a Service Provider is unable to obtain any such consent, 2seventy's sole liability and obligation and bluebird's sole remedy will be to require the Parties hereto to work together to agree upon a commercially reasonable alternative arrangement, which may include identification of alternate resources and equivalent services from such alternative resources on commercially reasonable terms. Any costs specified in the second sentence of Section 3.1 and any actual out-of-pocket fees levied on a Service Provider (a) in connection with its efforts to obtain and implement such consents and (b) in connection with the implementation of any such commercially reasonable alternative arrangement, will be borne by bluebird.

ARTICLE VI
TERM AND TERMINATION AND EFFECTS OF TERMINATION

Section 6.1 Termination. Except as otherwise provided herein or unless otherwise agreed in writing by the Parties hereto, a Service Provider's obligation to provide or procure, and bluebird's obligation to purchase, each Service shall cease as of the end of the term specified for such Service in the applicable Transition Service Schedule, and the Agreement will terminate in its entirety at the end of the Term; provided that (a) this Agreement may be extended, with respect to one or more Services, by mutual written agreement of the Parties, consent to which extension shall be in each Party's absolute discretion; provided that such extension shall be limited to one period of up to six (6) months following the initial term of the Service and (b) in the event that a Service shall not have been transitioned to bluebird solely as a result of a material breach by 2seventy of its obligations under this Agreement, the term for such Service will be extended solely for such period as shall be necessary for 2seventy to cure such material breach; provided that the breach is curable with the use of commercially reasonable efforts and is not related to a Service that could reasonably be obtained or performed by bluebird itself.

Section 6.2 Termination for Breach. In the event that a Party hereto commits a material breach with respect to any of the Services, the other Party may terminate this Agreement with respect to such Service only, unless such breach is cured not later than thirty (30) days after receipt by the breaching Party of written notice of such breach.

Section 6.3 Early Termination of a Service. Subject to the restrictions set forth herein, if bluebird should wish to terminate a Service (in whole, but not in part), bluebird shall provide written notice to the Service Provider not later than thirty (30) days prior to the requested termination date for such Service; provided, however, that no such notice of termination may be delivered to the Service Provider during the thirty (30) day period immediately following the date hereof. Notwithstanding the foregoing provisions, the Parties hereto acknowledge and agree that, in certain instances, terminating certain Services may require time periods longer than the thirty (30) day period specified in this Section 6.3. In any such event, the Parties agree to negotiate in good faith a longer period of time for any and all such transfers following the termination notice. bluebird will remain liable for any Fees or other amounts payable hereunder in connection with the terminated Service(s) incurred prior to the effective date of termination of such Service(s), including in the event that such terminated Services contemplated a deliverable that was not provided due to such early termination. bluebird acknowledges and agrees that (a) Services provided by Third Parties may be subject to term-limited licenses and contracts between a Service Provider and applicable Third Parties (collectively, "Provider Third Party Contracts"), (b) the renewal periods under the Provider Third Party Contracts may be for fixed periods and (c) a Service Provider may not have the right to renew certain Provider Third Party Contracts. As a result, bluebird agrees that (i) if Service Provider is required to extend any

Provider Third Party Contract in order to continue to provide any Service during the Term, then Service Provider shall notify bluebird and, if bluebird informs Service Provider within twenty (20) days of such notice that it wishes to continue to receive such Service, then bluebird shall be required to pay Service Provider the amount of any renewal fees or purchase commitments applicable to the relevant Service for the fixed renewal period specified in the applicable Provider Third Party Contract, regardless of whether the Term or Service Provider's provision of the relevant Service ends prior to the end of the relevant renewal period (provided that the Service Provider has used commercially reasonable efforts to negotiate a shorter period coterminous with the provision of the relevant Service) and (ii) a Service Provider shall not be required to provide any Service to the extent it is unable to renew any applicable Provider Third Party Contract or bluebird either informs Service Provider that it does not wish to continue to receive such Service under this Section 6.3 or does not respond to Service Provider's notice in the applicable twenty (20) day period.

Section 6.4 Termination Upon Insolvency. Either Party may terminate this Agreement immediately in the event the other Party (a) becomes insolvent, (b) is generally unable to pay, or fails to pay, its debts as they become due, (c) files, or has filed against it, a petition for voluntary or involuntary bankruptcy or pursuant to any other insolvency Law, (d) makes or seeks to make a general assignment for the benefit of its creditors, or (e) applies for, or consents to, the appointment of a trustee, receiver or custodian for a substantial part of its property or business.

Section 6.5 Accrued Rights. Termination or expiration of this Agreement for any reason will be without prejudice to any rights that have accrued to the benefit of a Party prior to such termination or expiration. Such termination or expiration will not relieve a Party from obligations that are expressly indicated to survive the termination or expiration of this Agreement.

Section 6.6 Effect of Termination. Not later than thirty (30) days following the date it receives a final invoice from a Service Provider following termination or expiration of any Services or this Agreement, bluebird shall pay to the Service Provider all remaining monies due to the Service Provider hereunder in respect of Services provided prior to such termination or expiration except for any amounts then the subject of a good faith dispute. In addition, at the end of the Term, each Party hereto shall, and shall cause any other Service Providers to, return or destroy, at the disclosing Party's option, the Confidential Information of the disclosing Party. In the event that the disclosing Party elects destruction, the other Party shall furnish to the disclosing Party a written certificate of destruction signed by an officer of the certifying Party. Any provision which by its nature should survive, including the provisions of this Section 6.6 (Effect of Termination), Section 2.11 (Intellectual Property), Article III (Fees and Payment), Article VII (Dispute Resolution), Article VIII (Limitation of Liability; Indemnification), Article

X (Confidentiality), Section 9.8 (Surrender) and Article XI (Miscellaneous), shall survive the termination of this Agreement.

ARTICLE VII
DISPUTE RESOLUTION

Section 7.1 Negotiation. A Party seeking resolution of a controversy, dispute or action arising out of, in connection with, or in relation to the interpretation, performance, nonperformance, validity or breach of this Agreement or otherwise arising out of, or in any way related to, this Agreement or the transactions contemplated hereby or thereby, including any action based on contract, tort, statute or constitution (collectively, "Disputes") shall provide written notice of such Dispute to the other Party, specifying the terms of such Dispute in reasonable detail ("Dispute Notice"). The Transition Committee shall attempt to resolve the Dispute through good faith negotiation for a reasonable period of time; provided that such reasonable period shall not, unless otherwise agreed by the Parties in writing, exceed thirty (30) days from the time of receipt by a Party of the Dispute Notice. If the Dispute has not been resolved within thirty (30) days after receipt of the Dispute Notice, the respective Chief Executive Officers or their respective designees (with full settlement authority) of 2seventy and bluebird shall meet in person (or where necessary, by phone) at a mutually acceptable time and, if applicable, place, and thereafter as often as they reasonably deem necessary, to attempt in good faith to resolve the Dispute. Any contractual time period or deadline under this Agreement to which such Dispute relates occurring after the Dispute Notice is received shall not be deemed to have passed until such Dispute has been resolved pursuant to this Article VII.

Section 7.2 Arbitration. Any Dispute that is not resolved pursuant to Section 7.1 within thirty (30) days after receipt of a Dispute Notice shall be resolved by final and binding arbitration pursuant to the procedures set forth in Section 8.2 of the Separation Agreement.

Section 7.3 Continuity of Service and Performance. Unless otherwise agreed in writing, the Parties shall continue to provide service and honor all other commitments under this Agreement during the course of a Dispute with respect to all matters not subject to such Dispute.

Section 7.4 Injunctive or Other Equity Relief. Nothing contained in this Agreement shall deny any Party the right to seek injunctive or other equitable relief in the context of a bona fide emergency or prospective irreparable harm, and such an action may be filed and maintained notwithstanding any ongoing arbitration proceeding; provided, however, that any other relief not expressly permitted under this Section 7.4 must be pursued in accordance with Section 7.2, with all remedies being cumulative to the extent allowed by applicable Law. The Parties further agree that any action brought under this Section 7.4 shall be brought exclusively in the courts within

the State of Delaware set forth in Section 11.12, and that such courts shall have personal jurisdiction over the Parties in such action.

ARTICLE VIII
LIMITATION OF LIABILITY; INDEMNIFICATION

Section 8.1 Limited Liability.

(a) The aggregate Liabilities of 2seventy and its Affiliates and Representatives, collectively, under this Agreement for any act or failure to act in connection herewith (including the performance or breach of this Agreement), or from the sale, delivery, provision or use of any Services provided under or contemplated by this Agreement, whether in contract, tort (including negligence and strict liability) or otherwise, at law or equity, shall not exceed the aggregate amount paid and payable to 2seventy and all other Service Providers under this Agreement.

(b) Notwithstanding anything to the contrary contained in the Separation Agreement or this Agreement, neither Party will be liable to the other Party or any of its Affiliates or Representatives, whether in contract, tort (including negligence and strict liability) or otherwise, at law or equity, for any special, indirect, incidental, punitive or consequential damages whatsoever (including lost profits or damages calculated on multiples of earnings approaches), which in any way arise out of, relate to or are a consequence of, the performance or nonperformance of this Agreement or the provision of, or failure to provide, any Services under this Agreement, regardless of whether such Party has been notified of the possibility of, or the foreseeability of, such damages.

(c) The limitations in this Section 8.1 will not apply with respect to any Liability arising out of, relating to or in connection with (i) any Third Party Claim to the extent a Party has an indemnification obligation to the other Party for such Liability under Section 8.3(a) or Section 8.3(b), (ii) any breach of Article X or (iii) the gross negligence, willful misconduct or fraud of or by the Party to be charged.

Section 8.2 Services Provided "As-Is". EACH SERVICE PROVIDER PROVIDES ANY AND ALL SERVICES ON AN "AS-IS" BASIS AND, EXCEPT AS SET FORTH IN SECTION 2.2, MAKES NO REPRESENTATIONS OR WARRANTIES AS TO THE SERVICES PROVIDED. EACH SERVICE PROVIDER DISCLAIMS ALL IMPLIED WARRANTIES, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, IN CONNECTION WITH THIS AGREEMENT.

Section 8.3 Indemnification.

(a) Subject to Section 8.1, bluebird hereby agrees to indemnify, defend and hold harmless 2seventy and its Affiliates and Representatives from and against any and all Liabilities arising from, relating to or resulting from the use of any Services provided by 2seventy or any member of its Group hereunder by bluebird or any member of its Group, except to the extent such Liabilities arise out of 2seventy's or another Service Provider's (i) breach of this Agreement, (ii) violation of Laws in providing such Services, or (iii) gross negligence or willful misconduct in providing such Services.

(b) Subject to Section 8.1, 2seventy hereby agrees to indemnify, defend and hold harmless bluebird and its Affiliates and Representatives from and against any and all Liabilities arising from, relating to or resulting from the provision of any Services by 2seventy or any member of its Group hereunder to bluebird or any member of its Group, to the extent such Liabilities result from 2seventy's or another Service Provider's (i) breach of this Agreement, (ii) violation of Laws in providing such Services, or (iii) gross negligence or willful misconduct in providing such Services.

(c) The provisions of Section 6.4 of the Separation Agreement shall govern claims for indemnification under this Agreement; provided that, for purposes of this Section 8.3, in the event of any conflict between the provisions of Section 6.4 of the Separation Agreement and this Article VIII, the provisions of this Agreement shall control.

(d) Indemnification pursuant to this Section 8.3 represents the Parties' sole and exclusive remedy under this Agreement; provided that, if a Service Provider commits an error with respect to, incorrectly performs or fails to perform any Service, at bluebird's request, without prejudice to any other rights or remedies bluebird may have, the Service Provider shall use commercially reasonable efforts to correct such error, re-perform such Service or perform such Service, as applicable, at no additional cost to bluebird. To the extent a Service Provider is unable to provide in its entirety a Service because of a partial delay which excuses performance pursuant to Section 11.6, the Service Provider shall allocate such resources and/or products as are then currently available to it and necessary for the performance of such Service ratably between the Service Provider for its own account and bluebird for the performance of such Services hereunder. Nothing in this Article VIII shall be deemed to eliminate or limit, in any respect, either Party's express obligation in this Agreement to pay any fees, expenses or costs in accordance with the terms of this Agreement.

ARTICLE IX
REAL ESTATE

Section 9.1 Occupancy Rights. Each Service Provider set forth on Schedule 9.1, with respect to the location set forth on such Schedule opposite such Service Provider's name (each, a "Shared Real Property"), hereby grants to the bluebird Group, a limited license for reasonable use and access to the space utilized by bluebird or any member of its Group in the conduct of the Severe Genetic Disease Business as of the Distribution Date, for the sole purpose of transitioning the Severe Genetic Disease Business, as applicable, and in accordance with the terms, covenants and conditions of this Article IX. The right of members of the bluebird Group to use and access the applicable Shared Real Property shall be consistent with the use and access afforded to the Severe Genetic Disease Business as of the Distribution Date. Such rights shall include the right to use the fixtures, improvements and furnishings located within the Shared Real Property consistent with such use as of the Distribution Date.

Section 9.2 Use. The bluebird Group shall use the applicable Shared Real Property (and the furnishings contained therein) for the same purposes as such Shared Real Property is utilized as of the Distribution Date and for no other purpose. The Shared Real Property may be occupied only by the personnel of the bluebird Group reasonably required in furtherance of the activities of the Severe Genetic Disease Business. The bluebird Group shall not make any alterations, additions or improvements to the Shared Real Property.

Section 9.3 License Fee. bluebird shall pay a fee for its Shared Real Property in an amount and in the manner set forth on Schedule 9.3.

Section 9.4 License Term. The license granted under this Article III will be effective as of immediately after the Distribution and will automatically expire at the earlier of (i) the end of the period set forth on Schedule 9.4 with respect to each Shared Real Property, or (ii) the expiration date of the relevant underlying lease pertaining to each Shared Real Property (in which case 2seventy shall provide to bluebird written notice thirty (30) days prior to such expiration). The rights granted herein in favor of the bluebird Group are in the nature of a license and shall not create any leasehold or other estate or possessory rights in Shared Real Property.

Section 9.5 Access and Common Areas. Unless otherwise specified on Schedule 9.5, the bluebird Group (including its personnel) shall access the applicable Shared Real Property through existing employee entrances designated by 2seventy. Access to any other areas ("Other Areas") in, on or about the applicable Shared Real Property (including conference room(s), break area(s), restroom(s), and cafeteria(s) other than to the extent located within the Shared Real Property) shall be as otherwise designated by 2seventy in its reasonable discretion. Except as

otherwise expressly provided herein or with the prior written consent of 2seventy, the bluebird Group shall not access any other areas.

Section 9.6 Compliance with 2seventy's Policies. The bluebird Group shall comply with the Service Provider's reasonable policies and procedures, security requirements and rules and regulations with respect to the applicable Shared Real Property and its occupancy of such Shared Real Property. Such policies may be changed from time to time upon reasonable prior notice at 2seventy's sole reasonable discretion.

Section 9.7 Relocation. 2seventy shall have the right, at its cost, to relocate the bluebird Group to other area(s) of each Shared Real Property by providing bluebird with reasonable advance notice; provided that such relocation does not reduce the rights of bluebird or increase the obligations of bluebird under this Agreement or unreasonably interrupt the day-to-day operations of the Severe Genetic Disease Business.

Section 9.8 Surrender. Upon the expiration or termination of the license granted under this Article IX, bluebird shall, at its sole cost and expense, (i) remove any personal property, equipment, trade fixtures and other goods and effects of the bluebird Group, and repair any damage to the Shared Real Property resulting from such removal, and (ii) otherwise quit and deliver up the Shared Real Property peaceably and quietly and in as good order and condition as the same were in on the Distribution Date, reasonable wear and tear, damage by fire and the elements excepted. In the event that bluebird fails to repair and perform the aforementioned facilities restoration and otherwise deliver the Shared Real Property as set forth above, 2seventy or any member of its Group shall have the right to make said reasonable repairs and reasonably perform such facilities restoration, charge bluebird or any member of its Group the reasonable costs of such repairs and restoration, and bluebird or any member of its Group shall reimburse 2seventy or the member of its Group, as applicable, within thirty (30) days of receipt of an invoice therefor.

ARTICLE X
CONFIDENTIALITY

Section 10.1 Confidentiality. The provisions of Sections 7.6 and 7.9 of the Separation Agreement will apply to disclosures of information made pursuant to this Agreement *mutatis mutandis*.

ARTICLE XI
MISCELLANEOUS

Section 11.1 Complete Agreement; Construction. This Agreement, including the Schedules, together with the Separation Agreement and the other Ancillary Agreements, shall

constitute the entire agreement between the Parties with respect to the subject matter hereof and shall supersede all previous negotiations, commitments, course of dealings and writings with respect to such subject matter. In the event and to the extent that there shall be a conflict or inconsistency between the provisions of this Agreement and any Schedule hereto, such Schedule shall control.

Section 11.2 Transaction Agreements. Except as expressly set forth herein, this Agreement is not intended to address, and should not be interpreted to address, the matters specifically and expressly covered by the other Transaction Agreements.

Section 11.3 Counterparts. This Agreement may be executed in one or more counterparts, all of which shall be considered one and the same agreement, and shall become effective when one or more such counterparts have been signed by each of the Parties and delivered to each of the Parties. Counterparts may be delivered via electronic mail (including pdf or any electronic signature complying with the U.S. federal ESIGN Act of 2000, e.g., www.docusign.com) or other transmission method and any counterpart so delivered shall be deemed to have been duly and validly delivered and be valid and effective for all purposes.

Section 11.4 Notices. All notices, requests, claims, demands and other communications under this Agreement shall be in writing and shall be given or made (and shall be deemed to have been duly given or made upon receipt) by delivery in person, by overnight courier service, by facsimile or email with receipt confirmed (followed by delivery of an original via overnight courier service) or by registered or certified mail (postage prepaid, return receipt requested) to

the respective Parties at the following addresses (or at such other address for a Party as shall be specified in a notice given in accordance with this Section 11.4):

To 2seventy:

2seventy bio, Inc.
60 Binney Street
Cambridge, MA 02142
Attn: General Counsel
Facsimile:
Email:

To bluebird:

bluebird bio, Inc.
60 Binney Street
Cambridge, MA 02142
Attn: General Counsel
Facsimile:
Email:

Section 11.5 Waivers. The delay or failure of either Party to exercise or enforce any of its rights under this Agreement will not constitute, or be deemed to be, a waiver of those rights, nor will any single or partial exercise of any such rights preclude any other or further exercise thereof or the exercise of any other right. No waiver of any provision of this Agreement will be effective unless it is in writing and signed by the Party against which it is being enforced.

Section 11.6 Force Majeure.

(a) Neither Party hereto will be liable for delay in performance (other than the payment of money) of its obligations to the extent caused by events which could not have been foreseen and are beyond the reasonable control of the Party affected (an event of "Force Majeure"), including (i) acts of God, the elements, pandemics, epidemics, explosions, accidents, landslides, lightning, earthquakes, fires, storms (including tornadoes and hurricanes or tornado and hurricane warnings), sinkholes, floods or washouts; (ii) labor shortage or trouble including strikes or injunctions (whether or not within the reasonable control of such Party and provided that the settlement of strikes and other labor disputes shall be entirely within the discretion of the Party experiencing the difficulty); (iii) inability to obtain material, equipment or transportation; (iv) national defense requirements, war, blockades, insurrections, sabotage, terrorism, riots, arrests and restraints of the government, either federal or state, civil or military (including any

governmental taking by eminent domain or otherwise); or (v) any changes in applicable Law, regulation or rule or the enforcement thereof by any Governmental Entity having jurisdiction, that limits or prevents a Party from performing its obligations hereunder or any notice from any such Governmental Entity of its intention to fine or penalize such Party or otherwise impede or limit such Party's ability to perform its obligations hereunder.

(b) Each Service Provider shall endeavor to provide to bluebird uninterrupted Services through the Term. In the event, however, that (i) the Service Provider is wholly or partially prevented from providing a Service or Services either temporarily or permanently by reason of any Force Majeure event, or (ii) the Service Provider, in the exercise of its reasonable good faith judgment, deems it necessary to suspend delivery of a Service hereunder for purposes of inspection, maintenance, repair, replacement of equipment parts or structures, or similar activities consistent with past practices, the Service Provider shall not be obligated to deliver the affected part of such Service during such periods, and, in the case of the immediately preceding clause (ii), the Service Provider shall cooperate with bluebird with respect to the timing of such interruption. Notices provided under this Section 11.6 shall be provided to bluebird's designees on the Transition Committee (or other executive designated in writing by bluebird in accordance with Article IV) and may be provided in accordance with Article IV.

Section 11.7 Assignment. Except as provided herein, neither Party may assign any rights or delegate any obligations arising under this Agreement, in whole or in part, directly or indirectly, without the prior written consent of the other Party (such consent not to be unreasonably withheld, conditioned or delayed), and any attempt to so assign any rights or delegate any obligations arising under this Agreement without such consent shall be void. Notwithstanding the foregoing, no such consent shall be required for any such assignment or delegation (i) with respect to 2seventy, to a Subsidiary of 2seventy (so long as such Subsidiary remains a Subsidiary of 2seventy), (ii) with respect to bluebird, to a Subsidiary of bluebird (so long as such Subsidiary remains a Subsidiary of bluebird) or (iii) to a *bona fide* Third Party in connection with a merger, reorganization, consolidation or the sale of all or substantially all the assets of a Party so long as the resulting, surviving or transferee entity assumes all the obligations of the assigning Party by operation of Law or pursuant to an agreement in form and substance reasonably satisfactory to the non-assigning Party; provided, however, that in the case of each of the preceding clauses (i) and (ii), no assignment permitted by this Section 11.7 shall release the assigning Party from liability for the full performance of its obligations under this Agreement.

Section 11.8 Successors and Assigns. The provisions of this Agreement and the obligations and rights hereunder shall be binding upon, inure to the benefit of and be enforceable by (and against) the Parties and their respective successors (whether by merger, acquisition of assets or otherwise) and permitted assigns.

Section 11.9 Third Party Beneficiaries. Except as provided in Section 8.3 with respect to Persons entitled to claim indemnification hereunder, this Agreement is solely for the benefit of the Parties and shall not be deemed to confer upon any Person other than the Parties any remedy, claim, liability, reimbursement, cause of Action or other right beyond any that exist without reference to this Agreement.

Section 11.10 Titles and Headings. Titles and headings to sections herein are inserted for the convenience of reference only and are not intended to be a part of or to affect the meaning or interpretation of this Agreement.

Section 11.11 Schedules. The Schedules will be construed with and as an integral part of this Agreement to the same extent as if the same had been set forth verbatim herein.

Section 11.12 Governing Law. This Agreement will be governed by, construed and interpreted in accordance with the Laws of the State of Delaware, without reference to principles of conflicts of Laws. Each Party irrevocably consents to the exclusive jurisdiction, forum and venue of the Delaware Court of Chancery (and if the Delaware Court of Chancery shall be unavailable, any Delaware State court or the federal court sitting in the State of Delaware) over any and all claims, disputes, controversies or disagreements between the Parties under or related to this Agreement or any of the transactions contemplated hereby, including their execution, performance or enforcement, whether in contract, tort or otherwise. Each of the Parties hereby agrees that it shall not assert, and shall hereby waive, any claim or right or defense that it is not subject to the jurisdiction of such courts, that the venue is improper, that the forum is inconvenient or any similar objection, claim or argument.

Section 11.13 Severability. In the event any one or more of the provisions contained in this Agreement should be held invalid, illegal or unenforceable in any respect, the validity, legality and enforceability of the remaining provisions contained herein and therein shall not in any way be affected or impaired thereby. The Parties shall endeavor in good-faith negotiations to replace the invalid, illegal or unenforceable provisions with valid provisions, the economic effect of which comes as close as possible to that of the invalid, illegal or unenforceable provisions.

Section 11.14 Interpretation. Interpretation of this Agreement shall be governed by the following rules of construction: (a) words in the singular shall be held to include the plural and vice versa, and words of one gender shall be held to include the other gender as the context requires; (b) references to the terms “Section,” “paragraph,” “clause,” “Exhibit” and “Schedule” are references to the Sections, paragraphs, clauses, Exhibits and Schedules of this Agreement unless otherwise specified; (c) the terms “hereof,” “herein,” “hereby,” “hereto,” and derivative or similar words refer to this entire Agreement, including the Schedules and Exhibits hereto; (d) references to “$” shall mean U.S. dollars; (e) the word “including” and words of similar import

when used in this Agreement shall mean "including without limitation," unless otherwise specified; (f) the word "or" shall not be exclusive; (g) references to "written" or "in writing" include in electronic form; (h) unless the context requires otherwise, references to "Party" shall mean 2seventy or bluebird, as appropriate, and references to "Parties" shall mean 2seventy and bluebird; (i) provisions shall apply, when appropriate, to successive events and transactions; (j) the table of contents and headings contained in this Agreement are for reference purposes only and shall not affect in any way the meaning or interpretation of this Agreement; (k) 2seventy and bluebird have each participated in the negotiation and drafting of this Agreement and if an ambiguity or question of interpretation should arise, this Agreement shall be construed as if drafted jointly by the parties and no presumption or burden of proof shall arise favoring or burdening either party by virtue of the authorship of any of the provisions in this Agreement or any interim drafts of this Agreement; and (l) a reference to any Person includes such Person's successors and permitted assigns.

Section 11.15 No Duplication; No Double Recovery. Nothing in this Agreement, the Separation Agreement or any other Ancillary Agreement is intended to confer to or impose upon any Party a duplicative right, entitlement, obligation or recovery with respect to any matter arising out of the same facts and circumstances.

Section 11.16 Independent Contractor Status. Each Service Provider will be deemed to be an independent contractor to bluebird. Nothing contained in this Agreement will create or be deemed to create the relationship of employer and employee between the Service Provider and bluebird. The relationship created between the Service Provider and bluebird pursuant to or by this Agreement is not and will not be one of partnership or joint venture. No Party to this Agreement will, by reason hereof, be deemed to be a partner or a joint venture of the other Party hereto in the conduct of their respective businesses and/or the conduct of the activities contemplated by this Agreement. Except as specifically and explicitly provided in this Agreement, and subject to and in accordance with the provisions hereof, no Party to this Agreement is now, will become, or will be deemed to be an agent or representative of the other Party. Except as herein explicitly and specifically provided, neither Party shall have any authority or authorization, of any nature whatsoever, to speak for or bind the other Party to this Agreement.

[Signature Page Follows]

IN WITNESS WHEREOF, the Parties have caused this Agreement to be duly executed as of the day and year first above written.

2SEVENTY BIO, INC.

By: /s/ Nick Leschly

Name: Nick Leschly

Title: President

BLUEBIRD BIO, INC.

By: /s/ Andrew Obenshain

Name: Andrew Obenshain

Title: President, Severe Genetic Diseases

ASSUMPTION AGREEMENT

This ASSUMPTION AGREEMENT (this "Assumption Agreement") is entered into as of November 3, 2021, by and between bluebird bio, Inc., a Delaware corporation ("bluebird"), and 2seventy bio, Inc., a Delaware corporation ("2seventy").

WHEREAS, the Board of Directors of bluebird has determined that it is appropriate, desirable and in the best interests of bluebird and its stockholders to separate bluebird into two separate, publicly-traded companies (the "Separation"), pursuant to that certain Separation Agreement, dated as of November 3, 2021, by and between bluebird and 2seventy;

WHEREAS, on September 7, 2021, bluebird entered into that certain Securities Purchase Agreement attached hereto as Exhibit A (the "Securities Purchase Agreement") with certain institutional investors named therein (collectively, the "Purchaser"), providing for the issuance and sale by bluebird to the Purchaser of (i) shares of common stock, par value $0.01 per share, of bluebird ("bluebird Common Stock"), and (ii) pre-funded warrants to purchase shares of Common Stock (the "bluebird Pre-Funded Warrant");

WHEREAS, concurrently with the execution of the Securities Purchase Agreement, bluebird entered into that certain Registration Rights Agreement, dated September 7, 2021, attached hereto as Exhibit B (the "Registration Rights Agreement") with the Purchaser;

WHEREAS, Section 4.18 of the Securities Purchase Agreement provides for, among other things, 2seventy to (i) deliver to the Purchaser a new warrant in form and substance substantially identical to the Pre-Funded Warrant (the "2seventy Pre-Funded Warrant") and (ii) assume all of the obligations under Article IV of the Securities Purchase Agreement and the Registration Rights Agreement, *mutatis mutandis*, in connection with the shares of common stock, par value $0.0001 per share, of 2seventy (the "2seventy Common Stock") that the Purchaser receives with respect to any of the shares of bluebird Common Stock purchased pursuant to the Securities Purchase Agreement held by the Purchaser as of the effective time of the Separation and the 2seventy Pre-Funded Warrant and the shares of 2seventy Common Stock issuable upon exercise of the 2 seventy Pre-Funded Warrant; and

WHEREAS, in connection with the Separation, 2seventy and bluebird wish to evidence such assumption of Article IV of the Securities Purchase Agreement and the Registration Rights Agreement by 2seventy.

NOW THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, the parties hereto agree as follows:

1. 2seventy hereby (i) assumes all of the obligations under Article IV of the Securities Purchase Agreement and the Registration Rights Agreement, *mutatis mutandis*, in connection with the shares of 2seventy Common Stock that the Purchaser receives with respect to any of the shares of bluebird Common Stock purchased pursuant to the Securities Purchase Agreement held by the Purchaser as of the effective time of the Separation and the 2seventy Pre-Funded Warrant and the shares of 2seventy Common Stock issuable upon exercise of the

2seventy Pre-Funded Warrant, and (ii) agrees to perform and observe all of the covenants, agreements and other obligations which are to be performed or observed by 2seventy thereunder from and after the effective time of the Separation. 2seventy assumes no other liabilities under the Securities Purchase Agreement or the Registration Rights Agreement, and the parties hereto agree that all such other liabilities shall remain the sole responsibility of bluebird.

2. This Assignment shall be binding upon, and inure to the benefit of, the parties hereto and their respective successors and assigns. The Purchaser shall be a third-party beneficiary of this Assumption Agreement; provided that this Assumption Agreement shall not enlarge any rights of the Purchaser under either the Securities Purchase Agreement or the Registration Rights Agreement.

3. This Assumption Agreement, together with the Securities Purchase Agreement and the Registration Rights Agreement, constitutes the entire agreement between the parties with respect to its subject matter.

4. This Assumption Agreement may be changed, modified or terminated only by an agreement in writing signed by the parties hereto.

5. This Agreement may be executed in two or more counterparts, all of which when taken together shall be considered one and the same agreement and shall become effective when counterparts have been signed by each party and delivered to the other party, it being understood that both parties need not sign the same counterpart. In the event that any signature is delivered by facsimile transmission, or by e-mail delivery of a ".pdf" format data file, such signature shall create a valid and binding obligation of the party executing (or on whose behalf such signature is executed) with the same force and effect as if such facsimile signature page were an original thereof.

6. All questions concerning the construction, validity, enforcement and interpretation of this Assumption Agreement shall be governed by and construed and enforced in accordance with the internal laws of the State of New York, without regard to the principles of conflicts of law thereof.

[Signature Page Follows]

IN WITNESS WHEREOF, the parties hereto have caused this Assumption Agreement to be executed by their duly authorized officers as of the date first above written.

BLUEBIRD BIO, INC.

By: /s/ Andrew Obenshain
Name: Andrew Obenshain
Title: President, Severe Genetic Diseases

2SEVENTY BIO, INC.

By: /s/ Nick Leschly
Name: Nick Leschly
Title: President

Exhibit A

SECURITIES PURCHASE AGREEMENT

This Securities Purchase Agreement (this "*Agreement*") is dated as of September 7, 2021, by and among bluebird bio, Inc., a Delaware corporation (the "*Company*"), and each purchaser identified on the signature pages hereto (each, including its successors and assigns, a "*Purchaser*" and collectively, the "*Purchasers*").

RECITALS

WHEREAS, the Company and each Purchaser is executing and delivering this Agreement in the same form as each other Purchaser, and in reliance upon the exemption from securities registration afforded by Section 4(a)(2) of the Securities Act of 1933, as amended (the "*Securities Act*"), and Rule 506(b) of Regulation D ("*Regulation D*") as promulgated by the United States Securities and Exchange Commission (the "*Commission*") under the Securities Act;

WHEREAS, each Purchaser, severally and not jointly, wishes to purchase, and the Company wishes to sell, upon the terms and conditions stated in this Agreement, (i) that aggregate number of shares of the Company's common stock, par value $0.01 per share (the "*Common Stock*") as set forth below such Purchaser's name on the signature page of this Agreement and (ii) warrants to purchase an aggregate number of shares of the Company's Common Stock as set forth below such Purchaser's name on the signature page of this Agreement at an exercise price of $0.01 per share in the form attached hereto as Exhibit A (the "*Pre-Funded Warrants*");

WHEREAS, the shares of Common Stock to be sold pursuant to the terms of this Agreement are sometimes referred to herein as the "*Purchased Shares*." The shares of Common Stock underlying the Pre-Funded Warrants are referred as the "*Underlying Shares*" and the Underlying Shares, the Purchased Shares, and the Pre-Funded Warrants are referred to, collectively, as the "*Securities*;"

WHEREAS, reference is made to the proposed distribution (the "*Distribution*") by the Company of shares of common stock, par value $0.0001 per share, of its wholly-owned subsidiary 2seventy bio, Inc. (the "*SpinCo*"), in connection with the spin-off of certain assets of the Company following which the Company and SpinCo would become two separate, publicly traded companies (the "*Separation*");

WHEREAS, the Company intends that, for U.S. federal income tax purposes, the Separation and the Distribution, taken together, will qualify as a reorganization within the meaning of Section 368(a)(1)(D) of the Code by reason of the Distribution qualifying under Section 355 of the Code; and

WHEREAS, contemporaneously with the execution and delivery of this Agreement, the Purchasers and the Company are executing and delivering a Registration Rights Agreement, substantially in the form attached hereto as Exhibit B (the "*Registration Rights Agreement*"), pursuant to which, among other things, the Company will agree to provide certain registration rights with respect to the Securities under the Securities Act and the rules and regulations promulgated thereunder and applicable state securities laws.

NOW, THEREFORE, IN CONSIDERATION of the mutual covenants contained in this Agreement, and for other good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, the Company and the Purchasers hereby agree as follows:

ARTICLE I.
DEFINITIONS

Definitions. In addition to the terms defined elsewhere in this Agreement, for all purposes of this Agreement, the following terms shall have the meanings indicated in this Article I:

"*8-K Filing*" has the meaning set forth in Section 4.5.

"*Action*" means any action, suit, inquiry, notice of violation, arbitration, complaint, proceeding (including any partial proceeding such as a deposition) or investigation pending or, to the Company's Knowledge, threatened in writing against the Company, any Subsidiary or any of their respective properties or any officer, director or employee of the Company or any Subsidiary acting in his or her capacity as an officer, director or employee before or by any federal, state, county, local or foreign court, arbitrator, governmental or administrative agency, regulatory authority, stock market, stock exchange or trading facility.

"*Affiliate*" means, with respect to any Person, any other Person that, directly or indirectly through one or more intermediaries, Controls, is controlled by or is under common control with such Person, as such terms are used in and construed under Rule 405 under the Securities Act. With respect to a Purchaser, any investment fund or managed account that is managed on a discretionary basis by the same investment manager as such Purchaser will be deemed to be an Affiliate of such Purchaser.

"*Agreement*" shall have the meaning ascribed to such term in the Preamble.

"*Board of Directors*" means the board of directors of the Company.

"*Business Day*" means a day, other than a Saturday or Sunday, on which banks in New York are open for the general transaction of business.

"*Bylaws*" has the meaning set forth in Section 3.1(b).

"*Certificate of Incorporation*" has the meaning set forth in Section 3.1(b).

"*Closing*" means the closing of the purchase and sale of the Purchased Shares and Pre-Funded Warrants pursuant to this Agreement.

"*Closing Date*" means the Trading Day when all of the Transaction Documents have been executed and delivered by the applicable parties thereto, and all of the conditions precedent to (i) the Purchasers' obligations to pay the Subscription Amount and (ii) the Company's obligations to deliver the Securities, in each case, have been satisfied or waived, but in no event later than the second (2nd) Trading Day following the date hereof.

"*Code*" means the U.S. Internal Revenue Code of 1986, as amended (including any successor statute).

"*Commission*" has the meaning set forth in the Recitals.

"*Common Stock*" has the meaning set forth in the Recitals, and also includes any securities into which the Common Stock may hereafter be reclassified or changed.

"*Company*" shall have the meaning ascribed to such term in the Preamble.

"*Company Counsel*" means Goodwin Procter LLP.

"*Company Deliverables*" has the meaning set forth in Section 2.2(a).

"*Company's Knowledge*" means with respect to any statement made to the knowledge of the Company, that the statement is based upon the actual knowledge, after reasonable inquiry, of the executive officers of the Company.

"*Control*" (including the terms "controlling," "controlled by" or "under common control with") means the possession, direct or indirect, of the power to direct or cause the direction of the management and policies of a Person, whether through the ownership of voting securities, by contract or otherwise.

"*Distribution*" has the meaning set forth in the Recitals.

"*Environmental Laws*" has the meaning set forth in Section 3.1(n).

"*Exchange Act*" means the Securities Exchange Act of 1934, as amended, or any successor statute, and the rules and regulations promulgated thereunder.

"*GAAP*" has the meaning set forth in Section 3.1(g).

"*Indemnified Person*" has the meaning set forth in Section 4.6(b).

"*Lead Investor*" means certain investment partnerships advised by Baker Bros. Advisors, LP.

"*Lead Investor Board Observer*" has the meaning set forth in Section 4.8.

"*Liens*" has the meaning set forth in Section 3.1(o).

"*Losses*" has the meaning set forth in Section 4.6(a).

"*Material Adverse Effect*" means any material adverse effect on (i) the results of operations, assets, business or financial condition of the Company and its Subsidiaries, taken as a whole, other than any material adverse effect that resulted primarily from (A) any change in the United States or foreign economies or securities or financial markets in general that does not have a disproportionate effect on the Company and its Subsidiaries, taken as a whole, (B) any change that generally affects the industry in which the Company and its Subsidiaries operate that does not have a disproportionate effect on the Company and its Subsidiaries, taken as a whole, (C) any change arising in connection with earthquakes, hostilities, acts of war, sabotage or terrorism or military actions or any escalation or material worsening of any such hostilities, acts of war, sabotage or terrorism or military actions, (D) the effect of any change in applicable laws or accounting rules that does not have a disproportionate effect on the Company and its Subsidiaries, taken as a whole, or (E) any change resulting from compliance with terms of this Agreement or the consummation of the transactions contemplated by this Agreement, (ii) the enforceability of any Transaction Document, or (iii) the Company's ability to perform in any material respect on a timely basis its obligations under any Transaction Document to be performed as of the date of determination.

"*New Security*" has the meaning set forth in Section 4.12(a).

"*Offering*" has the meaning set forth in Section 4.12(b).

"*Person*" means an individual, corporation, partnership, limited liability company, trust, business trust, association, joint stock company, joint venture, sole proprietorship, unincorporated organization, governmental authority or any other form of entity not specifically listed herein.

"*Pre-Funded Warrants*" has the meaning set forth in the Recitals.

"*Principal Trading Market*" means the Trading Market on which the Common Stock is primarily listed on and quoted for trading, which, as of the date of this Agreement and the Closing Date, shall be the Nasdaq Global Select Market.

"*Pro Rata Allocation*" has the meaning set forth in Section 4.12(a).

"*Proceeding*" means an action, claim, suit, investigation or legal proceeding (including, without limitation, an investigation or partial proceeding, such as a deposition), whether commenced or threatened.

"*Purchase Price*" means $16.50 per share.

"*Purchased Shares*" has the meaning set forth in the Recitals.

"*Purchaser*" or "*Purchasers*" shall have the meaning ascribed to such term in the Preamble.

"*Purchaser Deliverables*" has the meaning set forth in Section 2.2(b).

"*Purchaser Party*" has the meaning set forth in Section 4.6(a).

"*Purchaser Related Party*" has the meaning set forth in Section 6.19.

"*Registration Rights Agreement*" has the meaning set forth in the Recitals.

"*Registration Statement*" means a registration statement meeting the requirements set forth in the applicable Registration Rights Agreement and covering the resale by Purchasers of the Registrable Securities (as defined in the applicable Registration Rights Agreement).

"*Regulation D*" has the meaning set forth in the Recitals.

"*Rule 144*" means Rule 144 promulgated by the Commission pursuant to the Securities Act, as such Rule may be amended from time to time, or any similar rule or regulation hereafter adopted by the Commission having substantially the same effect as such Rule.

"*Rules and Regulations*" has the meaning set forth in Section 3.2(a).

"*SEC Documents*" has the meaning set forth in Section 3.1(g).

"*Secretary of State*" has the meaning set forth in the Recitals.

"*Securities Act*" has the meaning set forth in the Recitals.

"*Separation*" has the meaning set forth in the Recitals.

"*Signing Resolutions*" has the meaning set forth in Section 3.1(b).

"*Spinco*" has the meaning set forth in the Recitals.

"*Spinco Pre-Funded Warrant*" has the meaning set forth in Section 4.18(a).

"*Stock Plans*" has the meaning set forth in Section 3.1(c).

"*Stockholder Approval Requirement*" means (i) the issuance of such New Securities would require stockholder approval under the listing requirements of the Nasdaq Global Select Market or any other securities exchange upon which the Common Stock is then listed solely as a result of the issuance of the New Securities to the Lead Investor in such Offering and (ii) the Company would not be required to seek any stockholder approval in connection with the Offering but for issuance of such New Securities to the Lead Investor.

"*Subscription Amount*" means with respect to each Purchaser, the aggregate amount to be paid for the Purchased Shares and Pre-Funded Warrants purchased hereunder as indicated on such Purchaser's signature page to this Agreement.

"*Subsidiary*" means any entity in which the Company, directly or indirectly, owns sufficient capital stock or holds a sufficient equity or similar interest such that it is consolidated with the Company in the financial statements of the Company.

"*Tax-Related Person*" means, with respect to any Purchaser, any Person whose ownership of stock would be attributable to, or aggregated with, such Purchaser's ownership under Section 355(d)(8) or 355(e)(4)(C) of the Code, as applicable.

"*Trading Day*" means (i) a day on which the Common Stock is listed or quoted and traded on its Principal Trading Market (other than the OTC Bulletin Board), or (ii) if the Common Stock is not listed on a Trading Market (other than the OTC Bulletin Board), a day on which the Common Stock is traded in the over-the-counter market, as reported by the OTC Bulletin Board, or (iii) if the Common Stock is not quoted on any Trading Market, a day on which the Common Stock is quoted in the over-the-counter market as reported in the "pink sheets" by Pink Sheets LLC (or any similar organization or agency succeeding to its functions of reporting prices); *provided*, that in the event that the Common Stock is not listed or quoted as set forth in (i), (ii) or (iii) hereof, then Trading Day shall mean a Business Day.

"*Trading Market*" means whichever of the New York Stock Exchange, the NYSE Amex, the Nasdaq Global Select Market, the Nasdaq Global Market, the Nasdaq Capital Market or the OTC Bulletin Board on which the Common Stock is listed or quoted for trading on the date in question.

"*Transaction Documents*" means this Agreement, the schedules and exhibits attached hereto and any other documents or agreements executed in connection with the transactions contemplated hereunder.

"*Transfer Agent*" means American Stock Transfer & Trust Company, or any successor transfer agent for the Company.

"*Underlying Shares*" has the meaning set forth in the Recitals.

ARTICLE II.
PURCHASE AND SALE

2.1 Closing.

(a) Purchase of Securities. Subject to the terms and conditions set forth in this Agreement, at the Closing, (i) the Company shall issue and sell to each Purchaser, and each Purchaser shall, severally and not jointly, purchase from the Company, the number of shares of Purchased Shares as indicated on such Purchaser's signature page to this Agreement at a per share price equal to the Purchase Price, and (ii) the Company shall issue and sell to each Purchaser, and each Purchaser shall, severally and not jointly, purchase from the Company, a Pre-Funded Warrant for that number of Underlying Shares as indicated on such Purchaser's signature page to this Agreement at a per share price equal to the Purchase Price minus $0.01 per share.

(b) Closing. The Closing of the purchase and sale of the Purchased Shares and Pre-Funded Warrants shall take place at the offices of the Company Counsel on the Closing Date or at such other locations or remotely by facsimile transmission or other electronic means as the parties may mutually agree.

(c) Payment. At the Closing, each Purchaser shall deliver its respective Subscription Amount in immediately available funds by wire transfer to a bank account designated by the Company.

2.2 Closing Deliveries.

(a) On or prior to the Closing, the Company shall issue, deliver or cause to be delivered to each Purchaser the following (the "*Company Deliverables*"):

(i) this Agreement, duly executed by the Company;

(ii) the Registration Rights Agreement, duly executed by the Company;

(iii) one or more stock certificates (if physical certificates are required by Purchaser to be held immediately prior to Closing; if not, then facsimile or ".pdf" copies of such certificates shall suffice for purposes of Closing with the original stock certificates to be delivered within 30 calendar days of the Closing Date) allocated in such amounts as such Purchaser shall request, evidencing the Purchased Shares subscribed for by Purchaser hereunder, registered in the name of Purchaser;

(iv) one or more Pre-Funded Warrants registered in the name of such Purchaser to purchase up to a number of Underlying Shares as indicated on such Purchaser's signature page to this Agreement

(v) a legal opinion of Company Counsel, dated as of the Closing Date, addressed to the Purchasers, and dated the Closing Date, in form and substance reasonably satisfactory to the Purchasers;

(vi) a certificate of the Secretary of the Company, dated as of the Closing Date, in form and substance reasonably satisfactory to the Purchasers, (a) certifying the resolutions adopted by the Board of Directors of the Company or a duly authorized committee thereof approving the transactions contemplated by this Agreement and the other Transaction Documents and the issuance of the Securities, (b) certifying the current versions of the articles of incorporation, as amended and restated, and by-laws, as amended, of the Company and (c) certifying as to the signatures and authority of persons signing the Transaction Documents and related documents on behalf of the Company;

(vii) the certificate referred to in Section 5.1(g); and

(viii) a certificate evidencing the good standing of the Company in Delaware issued by the Secretary of State, as of a date within five Business Days of the Closing Date.

(b) On or prior to the Closing, each Purchaser shall deliver or cause to be delivered to the Company the following (the "*Purchaser Deliverables*"):

(i) this Agreement, duly executed by such Purchaser;

(ii) the Registration Rights Agreement, duly executed by such Purchaser;

(iii) its Subscription Amount, in U.S. dollars and in immediately available funds, in the amount indicated below such Purchaser's name on the applicable signature page hereto by wire transfer in accordance with the Company's written instructions; and

(iv) an Internal Revenue Service Form W-9 (or any successor form), duly and validly executed by such Purchaser.

ARTICLE III.
REPRESENTATIONS AND WARRANTIES

On or prior to the date hereof, the Company delivered to Purchaser and Purchaser delivered to the Company a letter setting forth items the disclosure of which is necessary in response to an express disclosure requirement contained in a provision hereof.

3.1 Representations and Warranties of the Company. The Company hereby represents and warrants as of the date hereof and the Closing Date (except for the representations and warranties that speak as of a specific date, which shall be made as of such date and except as set forth in the SEC Documents), to each of the Purchasers that:

(a) Organization and Qualification. The Company and each of its Subsidiaries is an entity duly incorporated or otherwise organized, validly existing and in good standing under the laws of the jurisdiction of its

incorporation or organization, with the requisite corporate power and authority to own and use its properties and assets and to carry on its business as currently conducted. Neither the Company nor any of its Subsidiaries is in violation or default of any of the provisions of its respective certificate of incorporation, bylaws or other organizational or charter documents. Each of the Company and its Subsidiaries is duly qualified to conduct business and is in good standing as a foreign corporation or other entity in each jurisdiction in which the nature of the business conducted or property owned by it makes such qualification necessary, except where the failure to be so qualified or in good standing, as the case may be, could not reasonably be expected to have a Material Adverse Effect and no proceeding has been instituted in any such jurisdiction revoking, limiting or curtailing or seeking to revoke, limit or curtail such power and authority or qualification. The Company has no Subsidiaries except for SpinCo and as set forth on Exhibit 21.1 to the Company's Annual Report on Form 10-K for the year ended December 31, 2020.

(b) Authorization; Enforcement; Validity. (i) The Company has the requisite corporate power and authority to enter into and perform its obligations under this Agreement and each other Transaction Documents, and to issue the Securities in accordance with the terms hereof and thereof, (ii) the execution and delivery of this Agreement and each of the other Transaction Documents by the Company and the consummation by it of the transactions contemplated hereby and thereby, including without limitation, the issuance of the Securities pursuant to this Agreement, have been duly authorized by the Company's Board of Directors and no further consent or authorization is required by the Company, its Board of Directors or its stockholders, (iii) this Agreement has been and each of the other Transaction Documents shall be on the Closing Date, duly executed and delivered by the Company and (iv) this Agreement constitutes, and each other Transaction Document upon its execution on behalf of the Company shall constitute, the valid and binding obligations of the Company enforceable against the Company in accordance with their terms, except as such enforceability may be limited by general principles of equity or applicable bankruptcy, insolvency, reorganization, moratorium, liquidation or similar laws relating to, or affecting generally, the enforcement of creditors' rights and remedies. The Board of Directors of the Company has approved the resolutions (the "*Signing Resolutions*") substantially in the form provided to the Purchasers to authorize this Agreement, the other Transaction Documents and the transactions contemplated hereby and thereby. The Signing Resolutions are valid, in full force and effect and have not been materially modified or supplemented in any respect. Except as set forth in this Agreement, no other approvals or consents of the Company's Board of Directors, any authorized committee thereof, and/or stockholders is necessary under applicable laws and the Company's certificate of incorporation, as amended and as in effect on the date hereof (the "*Certificate of Incorporation*"), and/or the Company's Bylaws, as amended and as in effect on the date hereof (the "*Bylaws*"), to authorize the execution and delivery of this Agreement or any of the transactions contemplated hereby, including, but not limited to, the issuance of the Securities.

(c) Capitalization. As of the date hereof, the authorized capital stock of the Company is set forth in the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2021, as filed with the Commission on August 9, 2021. As of the date hereof, and except as disclosed in the SEC Documents or as provided in any of the Transaction Documents, (i) no shares of the Company's capital stock are subject to preemptive rights or any other similar rights or any liens or encumbrances suffered or permitted by the Company, (ii) there are no outstanding debt securities, (iii) except for outstanding securities of the Company under the equity incentive plans of the Company (the "*Stock Plans*"), there are no outstanding options, warrants, scrip, rights to subscribe to, calls or commitments of any character whatsoever relating to, or securities or rights convertible into, any shares of capital stock of the Company or any of its Subsidiaries, or contracts, commitments, understandings or arrangements by which the Company or any of its Subsidiaries is or may become bound to issue additional shares of capital stock of the Company or any of its Subsidiaries or options, warrants, scrip, rights to subscribe to, calls or commitments of any character whatsoever relating to, or securities or rights convertible into, any shares of capital stock of the Company or any of its Subsidiaries, (iv) there are no agreements or arrangements under which the Company or any of its Subsidiaries is obligated to register the sale of any of their securities under the Securities Act (except the Registration Rights Agreements), (v) there are no outstanding securities or instruments of the Company or any of its Subsidiaries which contain any redemption or similar provisions, and there are no contracts, commitments, understandings or arrangements by which the Company or any of its Subsidiaries is or may become bound to redeem a security of the Company or any of its Subsidiaries, (vi) there are no securities or instruments containing anti-dilution or similar provisions that will be triggered by the issuance of the Securities as described in this Agreement

and (vii) the Company does not have any stock appreciation rights or "phantom stock" plans or agreements or any similar plan or agreement. The Company has made available to the Purchasers true and correct copies of the Certificate of Incorporation and Bylaws, and summaries of the material terms of all securities convertible into or exercisable for Common Stock, if any, (other than outstanding securities of the Company under the Stock Plans) and copies of any documents containing the material rights of the holders of such securities in respect thereto that are not disclosed in the SEC Documents.

(d) Issuance, Sale and Delivery of the Securities. The Securities being purchased hereunder have been duly authorized and, when issued, delivered and paid for in the manner set forth in this Purchase Agreement, and with respect to the Underlying Shares, upon payment of the exercise price pursuant to the terms of the Pre-Funded Warrants, will be validly issued, fully paid and nonassessable and free and clear of all liens, encumbrances and rights of refusal of any kind and the Purchasers shall be entitled to all rights accorded to a holder of Common Stock. The Underlying Shares have been duly and validly reserved from the Company's authorized capital stock. Except as disclosed in the SEC Documents and for the rights described in this Purchase Agreement, no stockholder of the Company has any right to require the Company to register the sale of any capital stock owned by such stockholder under the Registration Statement. No further approval or authority of the stockholders or the Board of Directors of the Company will be required for the issuance and sale of the Securities to be sold by the Company as contemplated herein.

(e) No Conflicts. The execution, delivery and performance of the Transaction Documents by the Company and the consummation by the Company of the transactions contemplated hereby and thereby (including, without limitation, the reservation for issuance and issuance of the Underlying Shares) will not (i) result in a violation of the Certificate of Incorporation, any certificate of designation, preferences and rights of any outstanding series of preferred stock of the Company or the Bylaws or (ii) conflict with, or constitute a default (or an event which with notice or lapse of time or both would become a default) under, or give to others any rights of termination, amendment, acceleration or cancellation of, any agreement, indenture or instrument to which the Company or any of its Subsidiaries is a party, or result in a violation of any law, rule, regulation, order, judgment or decree (including federal and state securities laws and regulations and the rules and regulations of the Principal Trading Market applicable to the Company or any of its Subsidiaries) or by which any property or asset of the Company or any of its Subsidiaries is bound or affected, except in the case of conflicts, defaults, terminations, amendments, accelerations, cancellations and violations under clause (ii), which could not reasonably be expected to have a Material Adverse Effect. Neither the Company nor its Subsidiaries is in violation of any term of or in default under its Certificate of Incorporation, any certificate of designation, preferences and rights of any outstanding series of preferred stock of the Company or Bylaws or their organizational charter or bylaws, respectively. Neither the Company nor any of its Subsidiaries is in violation of any term of or is in default under any material contract, agreement, mortgage, indebtedness, indenture, instrument, judgment, decree or order or any statute, rule or regulation applicable to the Company or its Subsidiaries, except for possible conflicts, defaults, terminations or amendments that could not reasonably be expected to have a Material Adverse Effect. The business of the Company and its Subsidiaries is not being conducted, and shall not be conducted, in violation of any law, ordinance or regulation of any governmental entity, except for possible violations, the sanctions for which either individually or in the aggregate could not reasonably be expected to have a Material Adverse Effect. Except as specifically contemplated by this Agreement and as required under the Securities Act or applicable state securities laws and the rules and regulations of the Principal Trading Market, the Company is not required to obtain any consent, authorization or order of, or make any filing or registration with, any court or governmental agency or any regulatory or self-regulatory agency in order for it to execute, deliver or perform any of its obligations under or contemplated by the Transaction Documents in accordance with the terms hereof or thereof. Except as set forth elsewhere in this Agreement, all consents, authorizations, orders, filings and registrations which the Company is required to obtain pursuant to the preceding sentence shall be obtained or effected on or prior to the Closing Date. Since one year prior to the date hereof, the Company has not received nor delivered any notices related to non-compliance with the rules of the Principal Trading Market. The Principal Trading Market has not commenced any delisting proceedings against the Company.

(f) SEC Documents; Financial Statements. The Company has filed all reports, schedules, forms, statements and other documents required to be filed by the Company under the Securities Act and the Exchange Act,

including pursuant to Section 13(a) or 15(d) thereof, for the twelve months preceding the date hereof (or such shorter period as the Company was required by law or regulation to file such material) (the foregoing materials, including the exhibits thereto and documents incorporated by reference therein, being collectively referred to herein as the "*SEC Documents*") on a timely basis or has received a valid extension of such time of filing and has filed any such SEC Documents prior to the expiration of any such extension. As of their respective dates and to the Company's Knowledge, the SEC Documents complied in all material respects with the requirements of the Securities Act and the Exchange Act, as applicable. None of the SEC Documents, when filed, contained any untrue statement of a material fact or omitted to state a material fact required to be stated therein or necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading. The financial statements of the Company included in the SEC Documents comply in all material respects with applicable accounting requirements and the rules and regulations of the SEC with respect thereto as in effect at the time of filing. Such financial statements have been prepared in accordance with United States generally accepted accounting principles applied on a consistent basis during the periods involved ("*GAAP*"), except as may be otherwise specified in such financial statements or the notes thereto and except that unaudited financial statements may not contain all footnotes required by GAAP, and fairly present in all material respects the financial position of the Company and its consolidated Subsidiaries as of and for the dates thereof and the results of operations and cash flows for the periods then ended, subject, in the case of unaudited statements, to normal, immaterial, year-end audit adjustments. The Company has received no notices or correspondence from the SEC for the one year preceding the date hereof. To the Company's Knowledge, the SEC has not commenced any enforcement proceedings against the Company or any of its Subsidiaries.

(g) Absence of Certain Changes. Except as disclosed in the SEC Documents, since June 30, 2021, there has been no material adverse change in the business, properties, operations, financial condition or results of operations of the Company or its Subsidiaries. The Company has not taken any steps, and does not currently expect to take any steps, to seek protection pursuant to any bankruptcy law nor does the Company or any of its Subsidiaries have any knowledge or reason to believe that its creditors intend to initiate involuntary bankruptcy or insolvency proceedings. The Company is financially solvent and is generally able to pay its debts as they become due. Except as disclosed in the SEC Documents, no event, liability, fact, circumstance, occurrence or development (including, without limitation, any fundamental transaction, change of control or similar event under any agreement (including, without limitation, any employment agreement)) has occurred or exists, or is reasonably expected to occur or exist, with respect to the Company or its business, properties, operations, assets or financial condition that, but for the passage of time, would be required to be disclosed by the Company under applicable securities laws at the time this representation is made that has not been publicly disclosed at least one Trading Day prior to the date that this representation is made.

(h) Absence of Change of Control. The execution, delivery and performance by the Company of this Agreement and the other Transaction Documents to which it is a party, and the issuance of the Securities on the Closing Date do not and will not result in any fundamental transaction, change of control or similar event, the requirement to make any payment or adjustment or issue any shares of Common Stock or other securities with respect to any fundamental transaction, change of control or similar event, or an event that with the passage of time could result in a fundamental transaction, change of control or similar event under any agreement (including, without limitation, any employment agreement), outstanding security (including, without limitation, any option or warrant to purchase Common Stock), other instrument or under any applicable law and regulations (including the rules of the Principal Trading Market).

(i) Absence of Litigation. There is no action, suit, proceeding, inquiry or investigation before or by any court, public board, government agency, self-regulatory organization or body pending or, to the Company's Knowledge or to the knowledge of any of its Subsidiaries, threatened against or affecting the Company, the Common Stock or any of the Company's or its Subsidiaries' officers or directors in their capacities as such, which could reasonably be expected to have a Material Adverse Effect.

(j) Acknowledgment Regarding Purchasers' Status. The Company acknowledges and agrees that the Purchasers are acting solely in the capacity of arm's length purchaser with respect to the Transaction Documents and the transactions contemplated hereby and thereby. The Company further acknowledges that the Purchasers are

not acting as financial advisors or fiduciaries of the Company (or in any similar capacity) with respect to the Transaction Documents and the transactions contemplated hereby and thereby and any advice given by the Purchasers or any of their representatives or agents in connection with the Transaction Documents and the transactions contemplated hereby and thereby is merely incidental to the Purchasers' purchase of the Securities. The Company further represents to the Purchasers that the Company's decision to enter into the Transaction Documents has been based solely on the independent evaluation by the Company and its representatives and advisors.

(k) No Aggregated Offering. Neither the Company, nor or any of its affiliates, nor any Person acting on their behalf has, directly or indirectly, made any offers or sales of any security, under circumstances that would cause this offering of the Securities to be aggregated with prior offerings by the Company in a manner that would require stockholder approval pursuant to the rules of the Principal Trading Market on which any of the securities of the Company are listed or designated. The issuance and sale of the Securities hereunder does not contravene the rules and regulations of the Principal Trading Market.

(l) Intellectual Property Rights. The Company and its Subsidiaries own or possess adequate rights or licenses to use all material trademarks, trade names, service marks, service mark registrations, service names, patents, patent rights, copyrights, inventions, licenses, approvals, governmental authorizations, trade secrets and rights necessary to conduct their respective businesses as now conducted. None of the Company's material trademarks, trade names, service marks, service mark registrations, service names, patents, patent rights, copyrights, inventions, licenses, approvals, government authorizations, trade secrets or other intellectual property rights have expired or terminated, or, by the terms and conditions thereof, could expire or terminate within two years from the date of this Agreement except as disclosed in the SEC Documents. To the Company's Knowledge, neither the Company nor the Subsidiaries have infringed on any material trademark, trade name rights, patents, patent rights, copyrights, inventions, licenses, service names, service marks, service mark registrations, trade secret or other similar rights of others, or of any such development of similar or identical trade secrets or technical information by others, and there is no claim, action or proceeding being made or brought against, or to the Company's Knowledge, being threatened against, the Company or its Subsidiaries regarding trademark, trade name, patents, patent rights, invention, copyright, license, service names, service marks, service mark registrations, trade secret or other infringement, which could reasonably be expected to have a Material Adverse Effect.

(m) Environmental Laws. To the Company's Knowledge, the Company and its Subsidiaries (i) are in compliance with any and all applicable foreign, federal, state and local laws and regulations relating to the protection of human health and safety, the environment or hazardous or toxic substances or wastes, pollutants or contaminants ("*Environmental Laws*"), (ii) have received all permits, licenses or other approvals required of them under applicable Environmental Laws to conduct their respective businesses and (iii) are in compliance with all terms and conditions of any such permit, license or approval, except where, in each of the three foregoing clauses, the failure to so comply could not reasonably be expected to have, individually or in the aggregate, a Material Adverse Effect.

(n) Title. Except as disclosed in the SEC Documents, the Company and its Subsidiaries have good and marketable title in fee simple to all real property owned by them and good and marketable title in all personal property owned by them that is material to the business of the Company and its Subsidiaries, in each case free and clear of all liens, encumbrances and defects ("*Liens*"), except for Liens as do not materially affect the value of such property and do not materially interfere with the use made and proposed to be made of such property by the Company and its Subsidiaries and Liens for the payment of federal, state or other taxes, the payment of which is neither delinquent nor subject to penalties. Any real property and facilities held under lease by the Company and its Subsidiaries are held by them under valid, subsisting and enforceable leases with which the Company and its Subsidiaries are in compliance with such exceptions as are not material and do not interfere with the use made and proposed to be made of such property and buildings by the Company and its Subsidiaries.

(o) Insurance. The Company and each of its Subsidiaries are insured by insurers of recognized financial responsibility against such Losses and risks and in such amounts as management of the Company believes to be prudent and customary in the businesses in which the Company and its Subsidiaries are engaged. Neither the Company nor any such Subsidiary has been refused any insurance coverage sought or applied for and neither the

Company nor any such Subsidiary has any reason to believe that it will not be able to renew its existing insurance coverage as and when such coverage expires or to obtain similar coverage from similar insurers as may be necessary to continue its business at a cost that would not materially and adversely affect the condition, financial or otherwise, or the earnings, business or operations of the Company and its Subsidiaries, taken as a whole.

(p) Regulatory Permits. The Company and its Subsidiaries possess all material certificates, authorizations and permits issued by the appropriate federal, state or foreign regulatory authorities necessary to conduct their respective businesses, and neither the Company nor any such Subsidiary has received any notice of proceedings relating to the revocation or modification of any such certificate, authorization or permit.

(q) Tax Status. The Company and each of its Subsidiaries has duly and timely made or filed (taking into account applicable extensions) all U.S. federal, state, local and non-U.S. income and all other material tax returns, reports and declarations required to have been made or filed by any jurisdiction to which it is subject and such returns, reports and declarations are true, correct and complete in all material respects, has duly and timely paid all taxes and other governmental assessments and charges that are material in amount, shown or determined to be due on such returns, reports and declarations, except those being contested in good faith and for which the Company has set aside on its books provisions reasonably adequate for the payment thereof as determined in accordance with GAAP, and has in effect no waivers of applicable statutes of limitations with respect to taxes for any year. There are no unpaid taxes in any material amount claimed to be due by the taxing authority of any jurisdiction. The Company and each Subsidiary has not reported any material uncertain tax positions pursuant to FASB Interpretation 48 (FIN 48), "Accounting for Uncertainty in Income Taxes" on the Company's financial statements, and the officers of the Company know of no basis for any such tax reporting positions. There have been no examinations or audits of any tax returns, reports or declarations of the Company or its Subsidiaries by any applicable U.S. federal, state, local or non-U.S. governmental agency and, to the Company's Knowledge, there are no currently or proposed examinations or audits. The Company and its Subsidiaries have no liability for taxes of any person (other than the Company and its Subsidiaries) arising from the application of U.S. Treasury Regulations Section 1.1502-6 or any similar provision of state, local or non-U.S. Law, or as a transferee or successor or member of an affiliated, consolidated, combined or unitary group. The Company and its Subsidiaries are not a party to, are not bound by, and do not have any obligation under, any tax sharing, tax indemnity or tax allocation agreement or similar agreement or arrangement (to which any person other than the Company and its Subsidiaries is a party) other than obligations in agreements or arrangements not primarily related to taxes. The Company and its Subsidiaries have not been party to any transaction that is a "prohibited tax shelter transaction" as defined in Section 4965(e) of the Code or any "reportable transaction" (other than any "loss transaction") within the meaning of U.S. Treasury regulations Section 1.6011-4(b). Neither the Company nor SpinCo is, or is reasonably expected to become, a "United States real property holding corporation" within the meaning of Section 897(c) of the Code. Neither the Company nor SpinCo is, or is reasonably expected to become, a "disqualified investment corporation" within the meaning of Section 355(g) of the Code or a "real estate investment trust" within the meaning of Section 355(h) of the Code. None of the Company or any of its Subsidiaries has taken any action that could reasonably be expected to prevent the Distribution from qualifying as a distribution eligible for non-recognition under Sections 355(a) of the Code. Other than the Distribution, within the past five (5) years, none of the Company or its Subsidiaries has been either a "distributing corporation" or a "controlled corporation" in a distribution in which the parties to such distribution treated the distribution as one to which Section 355 of the Code is applicable. The Company expects that, no later than the effective time of the Separation, the Company will have received the opinion of Goodwin Proctor LLP concluding that the Separation and the Distribution, taken together, "will" qualify as a transaction that is tax-free for U.S. federal income tax purposes under Sections 355 of the Code.

(r) Transactions With Affiliates. Except as set forth in the SEC Documents, to the Company's Knowledge, none of the officers or directors of the Company, the Company's stockholders, the officers or directors of any stockholder of the Company, or any family member or affiliate of any of the foregoing, has either directly or indirectly any interest in, or is a party to, any transaction that would be required to be disclosed as a related party transaction pursuant to Rule 404 of Regulation S-K promulgated under the Securities Act.

(s) Application of Takeover Protections. The Company and the Board of Directors have taken or will take prior to the Closing Date all necessary action, if any, in order to render inapplicable any control share

acquisition, business combination (as defined in the Delaware General Corporation Law ("*DGCL*")), poison pill (including any distribution under a rights agreement) or other similar anti-takeover provision under the Certificate of Incorporation or the laws of the state of its incorporation, including under Section 203 of the DGCL, which is or could become applicable to the Purchasers as a result of the transactions contemplated by this Agreement, including, without limitation, the Company's issuance of the Securities and the Purchasers' ownership of the Securities.

(t) Disclosure. Except with respect to the material terms and conditions of the transactions contemplated by the Transaction Documents or any other agreements to be entered into by the Company and the Purchasers that, in each case, will be timely publicly disclosed by the Company, the Company confirms that neither it nor any other Person acting on its behalf has provided the Purchasers or their agents or counsel with any information that the Company believes constitutes or might constitute material, non-public information which is not otherwise disclosed in the SEC Documents. The Company understands and confirms that the Purchasers will rely on the foregoing representation in effecting purchases and sales of securities of the Company. All of the disclosure furnished by or on behalf of the Company to the Purchasers regarding the Company, its business and the transactions contemplated hereby, including the disclosure schedules to this Agreement, is true and correct in all material respects. The Company acknowledges and agrees that the Purchasers neither make nor have made any representations or warranties with respect to the transactions contemplated hereby other than those specifically set forth in Article 3 hereof.

(u) Foreign Corrupt Practices. Neither the Company, nor to the Company's Knowledge, any agent or other Person acting on behalf of the Company, has (i) directly or indirectly, used any funds for unlawful contributions, gifts, entertainment or other unlawful expenses related to foreign or domestic political activity, (ii) made any unlawful payment to foreign or domestic government officials or employees or to any foreign or domestic political parties or campaigns from corporate funds, (iii) failed to disclose fully any contribution made by the Company (or made by any Person acting on its behalf of which the Company is aware) which is in violation of law, or (iv) violated in any material respect any provision of the Foreign Corrupt Practices Act of 1977, as amended.

(v) DTC Eligibility. The Company, through the Transfer Agent, currently participates in the DTC Fast Automated Securities Transfer (FAST) Program and the Common Stock can be transferred electronically to third parties via the DTC Fast Automated Securities Transfer (FAST) Program.

(w) Sarbanes-Oxley. The Company is in compliance in all material respects with all provisions of the Sarbanes-Oxley Act of 2002, as amended, which are applicable to it as of the date hereof.

(x) Certain Fees. No brokerage or finder's fees or commissions are or will be payable by the Company to any broker, financial advisor or consultant, finder, placement agent, investment banker, bank or other Person with respect to the transactions contemplated by the Transaction Documents. The Purchasers shall not have any obligation with respect to any fees or with respect to any claims made by or on behalf of other Persons for fees of a type contemplated in this Section 3.1(x) that may be due in connection with the transactions contemplated by the Transaction Documents.

(y) Investment Company. Neither the Company nor any Subsidiary is, and, following the completion of the offering, will not be, an "investment company" or an "affiliated person" of, or "promoter" or "principal underwriter" for an investment company, within the meaning of the Investment Company Act of 1940, as amended, and the rules and regulations of the Commission promulgated thereunder.

(z) Listing and Maintenance Requirements. The Common Stock is registered pursuant to Section 12(b) of the Exchange Act, and the Company has taken no action designed to, or which to the Company's Knowledge is likely to have the effect of, terminating the registration of the Common Stock pursuant to the Exchange Act nor has the Company received any notification that the SEC is currently contemplating terminating such registration. Except as disclosed in the SEC Documents, the Company has not, in the twelve (12) months preceding the date hereof, received any notice from any Person to the effect that the Company is not in compliance with the listing or maintenance requirements of the Principal Trading Market. Except as disclosed in the SEC Documents, the Company is in compliance with all such listing and maintenance requirements.

(aa) Accountants. The Company's accountants are set forth in the SEC Documents and, to the Company's Knowledge, such accountants are an independent registered public accounting firm as required by the Securities Act.

(bb) No Market Manipulation. The Company has not, and to its knowledge no Person acting on its behalf has, (i) taken, directly or indirectly, any action designed to cause or to result in the stabilization or manipulation of the price of any security of the Company to facilitate the sale or resale of any of the Securities, (ii) sold, bid for, purchased, or, paid any compensation for soliciting purchases of, any of the Securities, or (iii) paid or agreed to pay to any Person any compensation for soliciting another to purchase any other securities of the Company in violation of Regulation M promulgated under the Exchange Act.

(cc) Shell Company Status. The Company is not currently, and has never been, an issuer identified in Rule 144(i)(1) under the Securities Act.

3.2 Representations and Warranties of the Purchasers. Each Purchaser hereby, for itself and for no other Purchaser, represents and warrants as of the date hereof and as of the Closing Date to the Company as follows:

(a) Experience. (i) The Purchaser is knowledgeable, sophisticated and experienced in financial and business matters, in making, and is qualified to make, decisions with respect to investments in shares representing an investment decision like that involved in the purchase of the Purchased Shares, including investments in securities issued by the Company and comparable entities, has the ability to bear the economic risks of an investment in the Purchased Shares; (ii) the Purchaser is acquiring the number of the Purchased Shares set forth below such Purchaser's name on the signature page of this Agreement in the ordinary course of its business and for its own account for investment only and with no present intention of distributing any of such Purchased Shares or any arrangement or understanding with any other persons regarding the distribution of such Purchased Shares (this representation and warranty not limiting the Purchaser's right to sell pursuant to the Resale Registration Statement or in compliance with the Securities Act and the rules and regulations promulgated under the Exchange Act and the Securities Act (together, the "*Rules and Regulations*"), or, other than with respect to any claims arising out of a breach of this representation and warranty, each Purchaser's right to indemnification under Section 4.6); (iii) the Purchaser will not, directly or indirectly, offer, sell, pledge, transfer or otherwise dispose of (or solicit any offers to buy, purchase or otherwise acquire or take a pledge of) any of the Purchased Shares, nor will the Purchaser engage in any short sale that results in a disposition of any of the Purchased Shares by the Purchaser, except in compliance with the Securities Act and the Rules and Regulations and any applicable state securities laws; (iv) the Purchaser has, in connection with its decision to purchase the number of Purchased Shares set forth below such Purchaser's name on the signature page of this Agreement, relied solely upon the representations and warranties of the Company contained herein; and (v) the Purchaser has had an opportunity to discuss this investment with representatives of the Company and ask questions of them.

(b) Accredited Purchaser. The Purchaser is an "accredited investor" as defined in Rule 501(a) promulgated under the Securities Act, as presently in effect.

(c) Reliance on Exemptions. The Purchaser understands that the Purchased Shares are being offered and sold to it in reliance upon specific exemptions from the registration requirements of the Securities Act, the Rules and Regulations and state securities laws and that the Company is relying upon the truth and accuracy of, and the Purchaser's compliance with, the representations, warranties, agreements, acknowledgments and understandings of the Purchaser set forth herein in order to determine the availability of such exemptions and the eligibility of the Purchaser to acquire the Purchased Shares.

(d) Investment Decision. The Purchaser understands that nothing in this Purchase Agreement or any other materials presented to the Purchaser in connection with the purchase and sale of the Purchased Shares constitutes legal, tax or investment advice. The Purchaser has consulted such legal, tax and investment advisors as it, in its sole discretion, has deemed necessary or appropriate in connection with its purchase of the Purchased Shares.

(e) Risk of Loss. The Purchaser understands that its investment in the Purchased Shares involves a significant degree of risk, including a risk of total loss of the Purchaser's investment, and the Purchaser has full cognizance of and understands all of the risk factors related to the Purchaser's purchase of the Purchased Shares.

(f) Residency. The Purchaser's principal executive offices are in the jurisdiction set forth immediately below the Purchaser's name on the signature pages hereto.

(g) Organization; Validity; Enforcement. The Purchaser further represents and warrants to, and covenants with, the Company that (i) the Purchaser has full right, power, authority and capacity to enter into this Purchase Agreement and to consummate the transactions contemplated hereby and has taken all necessary action to authorize the execution, delivery and performance of this Purchase Agreement, (ii) the making and performance of this Purchase Agreement by the Purchaser and the consummation of the transactions herein contemplated will not violate any provision of the organizational documents of the Purchaser or conflict with, result in the breach or violation of, or constitute, either by itself or upon notice or the passage of time or both, a default under any material agreement, mortgage, deed of trust, lease, franchise, license, indenture, permit or other instrument to which the Purchaser is a party or, any statute or any authorization, judgment, decree, order, rule or regulation of any court or any regulatory body, administrative agency or other governmental agency or body applicable to the Purchaser, (iii) no consent, approval, authorization or other order of any court, regulatory body, administrative agency or other governmental agency or body is required on the part of the Purchaser for the execution and delivery of this Purchase Agreement or the consummation of the transactions contemplated by this Purchase Agreement, (iv) upon the execution and delivery of this Purchase Agreement, this Purchase Agreement shall constitute a legal, valid and binding obligation of the Purchaser, enforceable in accordance with its terms, except as such enforceability may be limited by applicable bankruptcy, insolvency, reorganization, moratorium or other laws of general application relating to or the enforcement of creditor's rights and the application of equitable principles relating to the availability of remedies, and except as rights to indemnity or contribution, including, but not limited to, the indemnification provisions set forth in Section 4.6 of this Purchase Agreement, may be limited by federal or state securities laws or the public policy underlying such laws and (v) there is not in effect any order enjoining or restraining the Purchaser from entering into or engaging in any of the transactions contemplated by this Purchase Agreement.

(h) Short Sales. Prior to the date hereof, the Purchaser has not taken, and prior to the public announcement of the transaction after the Closing the Purchaser shall not take, any action that has caused or will cause the Purchaser to have, directly or indirectly, sold or agreed to sell any shares of Common Stock, effected any short sale, whether or not against the box, established any "put equivalent position" (as defined in Rule 16a-1(h) under the Exchange Act with respect to the Common Stock, granted any other right (including, without limitation, any put or call option) with respect to the Common Stock or with respect to any security that includes, relates to or derived any significant part of its value from the Common Stock.

(i) Tax Matters.

(i) The Purchasers and, to the Purchasers' knowledge, their Tax-Related Persons, in the aggregate, as of immediately prior to the Closing (and without regard to this Agreement), do not own and do not have the right to acquire shares of Common Stock in excess of the number of shares of Common Stock set forth on Schedule 3.2(i)(i) (the "*Pre-Existing Holding*").

(ii) With respect to any acquisition of (x) shares of Common Stock prior to the date hereof or (y) the Securities pursuant to this Agreement, no Purchaser (and, to the Purchaser's knowledge, none of its Tax-Related Persons) has been or is (1) a member of a "coordinating group" (within the meaning of Treasury Regulations Section 1.355-7(h)) that includes such Purchaser or (2) acting pursuant to a "plan or arrangement" (within the meaning of Section 355(d)(7)(B) of the Code) with such Purchaser, in each case other than together with its Tax-Related Persons, the other Purchasers, and their respective Tax-Related Persons.

(iii) No Purchaser has or, as of the effective time of the Distribution, will have a plan or intention to sell, exchange, transfer (by gift or otherwise), or otherwise dispose of, any shares of Common Stock, any Securities, any shares of SpinCo stock received by such Purchaser in the Distribution, any SpinCo Pre-Funded Warrants received by such Purchaser in the Distribution, or any shares of SpinCo stock received by such Purchaser upon the exercise of a SpinCo Pre-Funded Warrant. For purposes of this clause (iii) and for the avoidance of doubt, the Purchasers anticipate that they may dispose of some or all of such shares of Common Stock, Securities or shares of SpinCo stock in the future.

The Company and each of the Purchasers acknowledge and agree that no party to this Agreement has made or makes any representations or warranties with respect to the transactions contemplated hereby other than those specifically set forth in this Article III and the Transaction Documents.

ARTICLE IV.
OTHER AGREEMENTS OF THE PARTIES

4.1 Transfer Restrictions.

(a) Compliance with Laws. Notwithstanding any other provision of this Article IV, each Purchaser covenants that it will not dispose of the Securities other than pursuant to an effective registration statement under, and in compliance with the requirements of, the Securities Act, or pursuant to an available exemption from, or in a transaction not subject to, the registration requirements of the Securities Act, and in compliance with any applicable state, federal or foreign securities laws. Notwithstanding the foregoing, the Securities may be pledged in connection with a bona fide margin account or other loan or financing arrangement secured by the Securities and such pledge of Securities shall not be deemed to be a transfer, sale or assignment of the Securities hereunder, and no Purchaser effecting a pledge of Securities shall be required to provide the Company with any notice thereof or otherwise make any delivery to the Company pursuant to this Agreement or any other Transaction Document.

(b) Legends. Certificates evidencing the Securities shall bear any legend as required by the "blue sky" laws of any state and a restrictive legend in substantially the following form (and, with respect to any Securities held in book-entry form, the Transfer Agent will record such a legend on the share register), until such time as they are not required under Section 4.1(c) or applicable law:

[NEITHER THESE SECURITIES NOR THE SECURITIES ISSUABLE UPON EXERCISE OF THESE SECURITIES HAVE BEEN REGISTERED][THESE SECURITIES HAVE NOT BEEN REGISTERED] UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"), OR APPLICABLE STATE SECURITIES LAWS. THESE SECURITIES MAY NOT BE OFFERED FOR SALE, SOLD, TRANSFERRED OR ASSIGNED (I) IN THE ABSENCE OF (A) AN EFFECTIVE REGISTRATION STATEMENT FOR THE SECURITIES UNDER THE SECURITIES ACT OR (B) AN AVAILABLE EXEMPTION FROM, OR IN A TRANSACTION NOT SUBJECT TO, THE REGISTRATION REQUIREMENTS OF THE SECURITIES ACT AND IN ACCORDANCE WITH APPLICABLE STATE SECURITIES LAWS OR BLUE SKY LAWS AS EVIDENCED BY A LEGAL OPINION OF COUNSEL REASONABLY SATISFACTORY TO THE COMPANY AND ITS TRANSFER AGENT OR (II) UNLESS SOLD PURSUANT TO RULE 144 UNDER THE SECURITIES ACT (PROVIDED THAT THE TRANSFEROR PROVIDES THE COMPANY WITH REASONABLE ASSURANCES THAT THE SECURITIES MAY BE SOLD PURSUANT TO SUCH RULE). NO REPRESENTATION IS MADE BY THE ISSUER AS TO THE AVAILABILITY OF THE EXEMPTION PROVIDED BY RULE 144 UNDER THE SECURITIES ACT FOR RESALES OF THESE SECURITIES.

(c) Removal of Legends.

(i) To the extent the resale of any Purchases Shared or Underlying Shares are registered under the Securities Act pursuant to an effective Registration Statement naming the holder thereof as a selling stockholder, the Company agrees to promptly (i) authorize the removal of the legend set forth in Section 4.1(b) and any other legend not required by applicable law from such Purchased Shares or

Underlying Shares and (ii) cause its Transfer Agent to issue such Underlying Shares without such legends to the holder thereof by electronic delivery at the applicable balance account at the Depository Trust Company upon surrender of any stock certificates evidencing such Underlying Shares. Any fees (with respect to the Transfer Agent, counsel or otherwise) associated with the removal of such legend(s) shall be borne by the Company. Each Purchaser hereby covenants and agrees that (i) to the extent resales of the Purchased Shares or Underlying Shares are made pursuant to such effective Registration Statement, that such resales will be made only during the time that such Registration Statement is effective and not withdrawn or suspended and only as permitted by such Registration Statement, and otherwise in compliance with the Securities Act (including applicable prospectus delivery obligations), and (ii) to the extent resales of the Purchased Shares or Underlying Shares are made pursuant to an available exemption from the registration requirements of the Securities Act, such resales will be made only as permitted by such exemption and otherwise in compliance with the Securities Act.

(ii) The Purchaser may request that the Company remove, and the Company agrees to authorize the removal of any legend from the Securities (i) following any sale of the Securities pursuant to Rule 144, or (ii) if such Securities are eligible for sale under Rule 144 following the expiration of the applicable holding requirement thereof. Following the time a legend is no longer required for the Securities under this Section 4.1(c)(ii), the Company will, no later than three Business Days following the delivery by a Purchaser to the Company or the Transfer Agent of a legended certificate representing such securities, deliver or cause to be delivered to such Purchaser a certificate representing such securities that is free from all restrictive and other legends.

4.2 Furnishing of Information. In order to enable Purchasers to sell the Securities under Rule 144 of the Securities Act, the Company shall maintain the registration of the Common Stock under Section 12(b) or 12(g) of the Exchange Act and at all times it is subject to the requirements of the Exchange Act it shall timely file (or obtain extensions in respect thereof and file within the applicable grace period) all reports required to be filed with the Commission by the Company after the date hereof pursuant to the Exchange Act and submit electronically any interactive data files specified in Rule 144(c)(1)(ii) of the Securities Act. If the Company is not required to file reports with the Commission pursuant to such laws, it will, for so long as the Purchasers hold the Securities, prepare and furnish to Purchasers and make publicly available the information described in Rule 144(c)(2), if the provision of such information will allow resales of the Securities pursuant to Rule 144.

4.3 Form D and Blue Sky Laws. The Company agrees to timely file a Form D with respect to the Purchased Shares as required under Regulation D. The Company, on or before the Closing Date, shall take such action as the Company shall reasonably determine is necessary in order to obtain an exemption for or to qualify the Purchased Shares for sale to Purchasers at the Closing pursuant to this Agreement under applicable securities or "blue sky" laws of the states of the United States (or to obtain an exemption from such qualification). The Company shall make all filings and reports relating to the offer and sale of the Purchased Shares required under applicable securities or "blue sky" laws of the states of the United States following the Closing Date.

4.4 No Integration. The Company shall not, and shall use its commercially reasonable efforts to ensure that no Affiliate of the Company shall, sell, offer for sale or solicit offers to buy or otherwise negotiate in respect of any security (as defined in Section 2 of the Securities Act) that will be integrated with the offer or sale of the Securities in a manner that would require the registration under the Securities Act of the sale of the Securities to Purchasers.

4.5 Securities Laws Disclosure; Publicity. Within the applicable period of time required by the Exchange Act, the Company shall file a Current Report on Form 8-K describing the terms and conditions of the transactions contemplated by this Agreement in the form required by the Exchange Act and attaching as exhibits to such Current Report on Form 8-K the material Transaction Documents (including, without limitation, this Agreement and the Registration Rights Agreements) (including all attachments, the "*8-K Filing*"). The Company shall provide the Purchasers with a reasonable opportunity to review and provide comments on the draft of such 8-K Filing. The Company shall also provide the Purchasers with a reasonable opportunity to review and provide comments on drafts of press releases or any other public statements with respect to the transactions contemplated hereby, if any.

Notwithstanding the foregoing, and unless otherwise agreed to in writing by the Company and the Purchasers, the Company shall not publicly disclose the name of any Purchaser or any Affiliate or investment adviser of any Purchaser, or include the name of any Purchaser or any Affiliate or investment adviser of any Purchaser in any press release or filing with the Commission or any regulatory agency or the Principal Trading Market, without the prior written consent of such Purchaser except, in the case of any such filing with the Commission or any such regulatory agency, if and to the extent otherwise required by law, the Rules and Regulations or the rules and regulations of such regulatory agency.

4.6 Indemnification.

(a) Indemnification of Purchasers. In addition to the indemnity provided to each Purchaser in the applicable Registration Rights Agreement, the Company will indemnify and hold each Purchaser and its directors, officers, stockholders, members, partners, employees and agents (and any other Persons with a functionally equivalent role of a Person holding such titles notwithstanding a lack of such title or any other title), each Person who controls Purchaser (within the meaning of Section 15 of the Securities Act and Section 20 of the Exchange Act), and the directors, officers, stockholders, agents, members, partners or employees (and any other Persons with a functionally equivalent role of a Person holding such titles notwithstanding a lack of such title or any other title) of such controlling person (each, a "*Purchaser Party*") harmless from any and all losses, liabilities, obligations, claims, contingencies, damages, charges, costs and expenses (including, without limitation, all judgments, amounts paid in settlements, fines, penalties, interest, court costs and reasonable attorneys' fees and costs of investigation) (each a "*Loss*") that any Purchaser Party may suffer or incur as a result of, arising out of, or relating to (i) any inaccuracy or breach of any of the representations, warranties, covenants or agreements made by the Company in this Agreement or in the other Transaction Documents (including any certificates delivered pursuant thereto) or (ii) any Action instituted against a Purchaser Party in any capacity, or any of them or their respective affiliates, by any Person who is not an affiliate of such Purchaser Party (other than the Company or its controlled affiliates), with respect to any of the transactions contemplated by this Agreement (unless such action is based upon a breach of such Purchaser's representations, warranties or covenants under the Transaction Documents or any agreements or understandings such Purchaser may have with any such stockholder or any violations by the Purchaser of state or federal securities laws or any conduct by such Purchaser which constitutes fraud, gross negligence, willful misconduct or malfeasance). To the extent that the foregoing undertaking by the Company may be unenforceable for any reason, the Company shall make the maximum contribution to the payment and satisfaction of each Loss that is permissible under applicable law.

(b) Conduct of Third-Party Indemnification Proceedings. Promptly after receipt by any Purchaser Party (the "*Indemnified Person*") of notice of any demand, claim or circumstances from any third-party which would or might give rise to a claim or the commencement of any Action in respect of which indemnity may be sought pursuant to Section 4.6(a), such Indemnified Person shall promptly notify the Company in writing and the Company shall assume the defense thereof, including the employment of counsel reasonably satisfactory to such Indemnified Person, and shall assume the payment of all fees and expenses; *provided*, *however*, that the failure of any Indemnified Person so to notify the Company shall not relieve the Company of its obligations hereunder except to the extent that the Company is actually and materially and adversely prejudiced by such failure to notify. In any such proceeding, any Indemnified Person shall have the right to retain its own counsel, but the fees and expenses of such counsel shall be at the expense of such Indemnified Person unless: (i) the Company and the Indemnified Person shall have mutually agreed to the retention of such counsel; (ii) the Company shall have failed promptly to assume the defense of such proceeding and to employ counsel reasonably satisfactory to such Indemnified Person in such proceeding; or (iii) in the reasonable judgment of counsel to such Indemnified Person, representation of both parties by the same counsel would be inappropriate due to actual or potential differing interests between them. The Company shall not be liable for any settlement of any proceeding effected without its written consent, which consent shall not be unreasonably withheld, delayed or conditioned. Without the prior written consent of the Indemnified Person, which consent shall not be unreasonably withheld, delayed or conditioned, the Company shall not effect any settlement of any pending or threatened proceeding in respect of which any Indemnified Person is or could have been a party and indemnity could have been sought hereunder by such Indemnified Persons, unless such settlement (A) includes an unconditional release of such Indemnified Person from all liability arising out of such proceeding,

(B) does not require any admission of wrongdoing by such Indemnified Person, and (C) does not obligate or require an Indemnified Person to take, or refrain from taking, any action.

4.7 Listing of Common Stock. In the time and manner required by the Principal Trading Market, the Company shall prepare and file with such Principal Trading Market an additional shares listing application covering all of the Purchased Shares and Underlying Shares and shall use its commercially reasonable efforts to take all steps necessary to cause all of the Purchased Shares and Underlying Shares to be approved for listing on the Principal Trading Market as promptly as possible thereafter.

4.8 Lead Investor Board Observer. During the period commencing on the Closing and ending on the fifth (5th) anniversary of the Closing, and for so long as the Lead Investor (1) holds at least [**]% of the Securities purchased by the Lead Investor as of the Closing Date, and (2) purchases at least [**]% of the maximum amount of New Securities it is permitted to purchase pursuant to Section 4.12 (Pre-Emptive Rights) below, the Lead Investor shall have the right to designate one (1) individual, reasonably acceptable to the Company, to be present and participate in a non-voting capacity at all meetings of the Board of Directors or any committee thereof, including any telephonic meetings but excluding executive sessions of any such meetings (such individual, the "*Lead Investor Board Observer*"). Any materials that are sent by the Company to the members of the Board of Directors in their capacity as such shall be sent to the Lead Investor Board Observer simultaneously by means reasonably designed to ensure timely receipt by the Lead Investor Board Observer, and the Company will give the Lead Investor Board Observer notice of such meetings, by the same means as such notices are delivered to the members of the Board of Directors and at the same time as notice is provided or delivered to the Board of Directors; provided, that the Lead Investor Board Observer agrees to hold in confidence and trust, to act in a fiduciary manner with respect to and not to disclose any information provided to or learned by the Lead Investor Board Observer acting in such capacity, whether in connection with the Lead Investor Board Observer's attendance at meetings of the Board of Directors or any committee thereof, in connection with the receipt of materials delivered to the Board of Directors or any committee thereof or otherwise. Notwithstanding the provisions of this Section 4.8, the Company reserves the right to exclude the Lead Investor Board Observer from any meeting of the Board of Directors, or a portion thereof, and to redact portions of any materials delivered to the Lead Investor Board Observer, where and to the extent that the Company reasonably believes that withholding such information or excluding the Lead Investor Board Observer from attending such meeting of the Board of Directors, or a portion thereof, is reasonably necessary: (i) to preserve attorney-client, work product or similar privilege between the Company and its counsel with respect to any matter; (ii) to protect trade secrets or to comply with the terms and conditions of confidentiality agreements between the Company and any third parties; or (iii) because the Board of Directors has determined in good faith that there exists, with respect to the subject of such deliberation or such information, an actual or potential conflict of interest between the Lead Investor and the Company. The Lead Investor Board Observer shall use the same degree of care to protect the Company's confidential and proprietary information as the Lead Investor uses to protect its confidential and proprietary information of like nature, but in no circumstances with less than reasonable care.

4.9 No Rights Agreement. The Company shall not enter into any poison pill agreement, stockholders' rights plan or similar agreement that shall limit the rights of a Purchaser to acquire Common Stock unless such poison pill agreement, stockholders' rights plan or similar agreement grants an exemption or waiver to the Purchaser immediately effective upon execution of such plan or agreement that would allow the Purchaser to acquire such Common Stock.

4.10 Certain Transactions. Prior to the Closing, the Company will not merge or consolidate into, or sell, transfer or lease all or substantially all of its property or assets to, any other party.

4.11 Ordinary Course of Business. Prior to the earlier of the Closing Date and the termination of this Agreement pursuant to Section 6.16, the Company shall, and shall cause each Subsidiary to, use reasonable best efforts to carry on its business in the ordinary course of business and to maintain and preserve its and such Subsidiary's business (including its organization, assets, properties, goodwill and insurance coverage) and preserve business relationships with customers, strategic partners, suppliers, distributors and others having business dealings with it. Without limiting the generality of the foregoing, to the extent reasonably practicable, the Company shall

consult with Purchasers prior to taking any material actions outside of the ordinary course of business at any time prior to the earlier of the Closing Date and termination of this Agreement pursuant to Section 6.16.

4.12 Pre-Emptive Rights.

(a) Sale of New Securities. If, at any time following the Closing and ending on the fifth (5th) anniversary of the Closing, and for so long as the Lead Investor (1) holds at least [**]% of the Securities purchased by the Lead Investor as of the Closing Date and (2) purchases at least [**]% of the maximum amount of New Securities it is permitted to purchase pursuant to this Section 4.12, the Company or any of its Subsidiaries makes any nonpublic offering (for clarity, meaning any offering that is not registered under the Securities Act or in a marketed "Rule 144A" offering of debt securities to accredited investors) of any Common Stock, other capital stock of the Company or other type of equity interest, warrants, options or other securities of the Company, including any securities that are convertible into or exchangeable into the foregoing (other than (i) Common Stock issuable to officers, employees, directors, managers or independent contractors of the Company or any of its Subsidiaries in connection with warrants, options, notes or other rights to acquire securities of the Company including any such shares issued pursuant to a Stock Plan, (ii) Common Stock, other capital stock of the Company or any other type of equity interest, warrants, options, convertible securities or other securities offered, sold or issued by the Company upon conversion, exercise or exchange of any securities of the Company outstanding immediately prior to the Closing, (iii) Common Stock, other capital stock of the Company or any other type of equity interest, warrants, options, convertible securities or other securities offered, sold or issued by the Company to equipment lessors, pursuant to an equipment leasing transaction, (iv) Common Stock, other capital stock of the Company or any other type of equity interest, warrants, options, convertible securities or other securities offered, sold or issued by the Company to a third-party financial institution in connection with a bona fide borrowing by the Company or its Subsidiaries, (v) Common Stock, other capital stock of the Company or any other type of equity interest, warrants, options, convertible securities or other securities offered or issued in connection with any stock split, stock combination, stock dividend, distribution or recapitalization, (vi) Common Stock, other capital stock of the Company or any other type of equity interest, warrants, options, convertible securities or other securities offered, sold or issued by the Company in connection with a strategic partnership or commercial arrangement, (vii) Common Stock, other capital stock of the Company or any other type of equity interest, warrants, options, convertible securities or other securities offered, sold or issued by the Company as acquisition consideration pursuant to the acquisition of another corporation, entity or business by the Company by merger, purchase of substantially all of the assets or other reorganization or to a joint venture agreement, and (viii) Underlying Shares offered sold or issued by the Company upon conversion, exercise or exchange of any of the Securities) (any such security, a "*New Security*"), then the Lead Investor shall have the right (but not the obligation) to acquire from the Company for the same price and on the same terms as such New Securities are proposed to be offered to others, up to the amount of New Securities in the aggregate required to enable it to maintain its proportionate Common Stock interest in the Company (calculated on a fully diluted basis, assuming the exercise in full, for cash, of any convertible or exchangeable securities, including the Securities, and for clarity, without regard to any limitation on exercise contained in the Pre-Funded Warrants) immediately prior to any such issuance of New Securities; *provided, however*, that notwithstanding anything in this Section 4.12 to the contrary, if such New Security is Common Stock or securities that are convertible into or exchangeable into Common Stock, then if the Lead Investor then holds any Pre-Funded Warrants, such New Securities purchased by the Lead Investor pursuant to this Section 4.12 shall instead be issued to the Lead Investor as additional Pre-Funded Warrants. The amount of New Securities that the Lead Investor shall be entitled to purchase in the aggregate shall be determined by multiplying (x) the total number or principal amount of such offered New Securities by (y) a fraction, the numerator of which is the sum of (i) the number of shares of Common Stock held by the Lead Investor, if any, and (ii) without duplication, the number of shares of Common Stock represented by the Pre-Funded Warrants held by the Lead Investor (for clarity, without regard to any limitation on exercise contained in the Pre-Funded Warrants), and the denominator of which is the total number of shares of Common Stock then outstanding (calculated on a fully diluted basis as of such date, assuming the exercise in full, for cash, of any convertible or exchangeable securities, including the Securities, and for clarity, without regard to any limitation on exercise contained in the Pre-Funded Warrants) (the Lead Investor's "*Pro Rata Allocation*"); provided that to the extent the issuance of New Securities to the Lead Investor would result in a Stockholder Approval Requirement, the Lead Investor may elect to purchase up to an amount of New Securities that would not cause the Stockholder Approval Requirement.

(b) Notice. In the event the Company proposes to offer or sell New Securities in a nonpublic offering (the "*Offering*"), it shall give the Lead Investor written notice of its intention, describing the price (or range of prices), anticipated amount of securities, timing, and all other terms upon which the Company proposes to offer the same, no later than ten Business Days, as the case may be, after the Company proposes to pursue the offering. If the information contained in the notice constitutes material non-public information (as defined under the applicable securities laws), the Company shall deliver such notice only to the individuals identified on the Lead Investor's signature page hereto, and shall not communicate the information to anyone else acting on behalf of the Lead Investor without the consent of one of the designated individuals. The Lead Investor shall have two Business Days from the date of receipt of such a notice to notify the Company in writing that it intends to exercise its rights provided in this Section 4.12 and as to the amount of New Securities the Lead Investor desires to purchase, up to the maximum amount calculated pursuant to Section 4.12(a). Such notice shall constitute a nonbinding indication of interest of the Lead Investor to purchase the amount of New Securities so specified at the price and other terms set forth in the Company's notice to it. The failure of the Lead Investor to respond within such two Business Day period shall be deemed to be a waiver of the Lead Investor's rights under this Section 4.12 only with respect to the Offering described in the applicable notice (and not, for the avoidance of doubt, with respect to any future Offerings).

(c) Purchase Mechanism. If the Lead Investor exercises its rights provided in this Section 4.12, the closing of the purchase of the New Securities by the Lead Investor with respect to which such right has been exercised shall take place within three Business Days after the giving of notice of such exercise, which period of time shall be extended for a maximum of 180 days in order to comply with applicable laws and regulations (including receipt of any applicable regulatory or stockholder approvals). Notwithstanding anything to the contrary herein, the closing of the purchase of the New Securities by the Lead Investor will occur no earlier than the closing of the Offering triggering the right being exercised by the Lead Investor. Each of the Company and the Lead Investor agrees to use its commercially reasonable efforts to secure any regulatory or stockholder approvals or other consents, and to comply with any law or regulation necessary in connection with the offer, sale and purchase of, such New Securities.

(d) Failure of Purchase. In the event the Lead Investor fails to exercise its rights provided in this Section 4.12 within said two Business Day period or, if so exercised, the Lead Investor is unable to consummate such purchase within the time period specified in Section 4.12(c) above because of its failure to obtain any required regulatory consent or approval, the Company shall thereafter be entitled (during the period of 60 days following the conclusion of the applicable period) to sell or enter into an agreement (pursuant to which the sale of the New Securities covered thereby shall be consummated, if at all, within 90 days from the date of said agreement) to sell the New Securities not elected to be purchased pursuant to this Section 4.12 by the Lead Investor or which the Lead Investor is unable to purchase because of such failure to obtain any such consent or approval, at a price and upon terms no more favorable in the aggregate to the purchasers of such securities than were specified in the Company's notice to the Lead Investor. Notwithstanding the foregoing, if such sale is subject to the receipt of any regulatory or stockholder approval or consent or the expiration of any waiting period, the time period during which such sale may be consummated shall be extended until the expiration of three Business Days after all such approvals or consents have been obtained or waiting periods expired, but in no event shall such time period exceed 180 days from the date of the applicable agreement with respect to such sale. In the event the Company has not sold the New Securities or entered into an agreement to sell the New Securities within said 60-day period (or sold and issued New Securities in accordance with the foregoing within 90 days from the date of said agreement (as such period may be extended in the manner described above for a period not to exceed 180 days from the date of said agreement)), the Company shall not thereafter offer, issue or sell such New Securities without again offering such securities to the Lead Investor in the manner provided in this Section 4.12.

(e) Public Offerings. If, at any time following the Closing and ending on the fifth (5th) anniversary of the Closing, and for so long as the Lead Investor (1) holds at least [**]% of the Securities purchased by the Lead Investor as of the Closing Date and (2) purchases at least [**]% of the maximum amount of New Securities it is permitted to purchase pursuant to this Section 4.12, the Company or any of its Subsidiaries makes a public offering of New Securities (for clarity, meaning any offering that is registered under the Securities Act or in a marketed "Rule 144A" offering of debt securities to accredited investors), the Company will instruct the underwriter(s) or placement agent(s) in such offering to contact Lead Investor about such offering no later than one

Business Day prior to the pricing of such offering (provided that in the case of any such public offering Lead Investor will not purchase more than its Pro Rata Allocation of such new securities. If such outreach concerning such proposed public offering would constitute material non-public information (as defined under the applicable securities laws), the Company will instruct the underwriter(s) to contact only the individuals identified on the Lead Investor's signature page hereto, and shall not communicate the information to anyone else acting on behalf of the Lead Investor without the consent of one of the designated individuals.

(f) Non-Cash Consideration. In the case of the offering of securities for a consideration in whole or in part other than cash, including securities acquired in exchange therefor (other than securities by their terms so exchangeable), the consideration other than cash shall be deemed to be the fair value thereof as determined by the Board of Directors; *provided, however*, that such fair value as determined by the Board of Directors shall not exceed the aggregate market price of the securities being offered as of the date the Board of Directors authorizes the offering of such securities.

(g) Cooperation. The Company and the Lead Investor shall cooperate in good faith to facilitate the exercise of the Lead Investor's rights under this Section 4.12, including to secure any required approvals or consents.

(h) Waiver. The Lead Investor may waive any or all of its rights under this Section 4.12 with respect to the purchase or proposed purchase by the Lead Investor of any New Securities (including, without limitation, the Lead Investor's right to receive written notice from the Company of any proposed Offering at least twenty Business Days prior to the proposed consummation date of any such proposed Offering and the Lead Investor's right to have a period of at least 30 days after the Lead Investor exercises its rights under this Section 4.12 to purchase the New Securities in respect of which the Lead Investor has exercised such rights) by executing and delivering to the Company a written instrument, document or agreement waiving such rights.

4.13 Ownership Limitation. Notwithstanding anything to the contrary in the Transaction Documents, neither the Company nor any Subsidiary thereof shall take any action (including any redemption, repurchase, or recapitalization of Common Stock, or securities or rights, options or warrants to purchase Common Stock, or securities of any type whatsoever that are, or may become, convertible into or exchangeable into or exercisable for Common Stock), that would cause the Lead Investor's ownership of voting securities of the Company (together with the ownership by the Lead Investor's Affiliates of voting securities of the Company) to increase above the then current Maximum Percentage (as defined in the Pre-Funded Warrants), without the prior written consent of the Lead Investor, which consent must be provided on 61 days' notice (up to a maximum of 19.99%).

4.14 Most Favored Nation. During the period from the date hereof through the Closing, neither the Company nor any of the Subsidiaries shall enter into any additional, or modify any existing, agreements with any existing or future investors in the Company or any of the Subsidiaries that have the effect of establishing rights or otherwise benefitting such investor in a manner more favorable in any respect to such investor than the rights and benefits established in favor of the Lead Investor by this Agreement, unless, in any such case, the Lead Investor has been offered such rights and benefits. The Company represents and warrants to the Lead Investor that as of the date hereof, no agreements exist with other Purchasers that have the effect of establishing rights or otherwise benefitting such Purchasers in a manner more favorable in any respect to such Purchaser than the rights and benefits established in favor of the Lead Investor by this Agreement.

4.15 Reservation of Common Stock. The Company shall reserve and keep available at all times during which the Pre-Funded Warrants are exercisable, free of preemptive rights, a sufficient number of shares of Common Stock for the purpose of enabling the Company to issue the Underlying Shares pursuant to this Agreement.

4.16 No Conflicting Agreements . The Company will not take any action, enter into any agreement or make any commitment that would conflict or interfere in any material respect with the Company's obligations to the Purchasers under the Transaction Documents.

4.17 Satisfaction of Closing Conditions. The Company and the Purchasers will use their reasonable best efforts to obtain the satisfaction of the conditions to Closing set forth in Section 5.1 and 5.2 hereof, respectively.

4.18 Separation Matters.

(a) In connection with the Separation, the Company will cause SpinCo to (i) deliver to the Purchaser a new warrant in form and substance substantially identical to the Pre-Funded Warrants for that number of shares of SpinCo stock determined in accordance with Section 9(d) of the Pre-Funded Warrant (the "*SpinCo Pre-Funded Warrant*") and (ii) assume all of the obligations under Article IV of this Agreement and the Registration Rights Agreement, *mutatis mutandis*, in connection with the shares of SpinCo stock the Purchasers receive with respect to any of the Purchased Shares held by such Purchasers as of the effective time of the Separation and the SpinCo Pre-Funded Warrant and the shares of SpinCo stock issuable upon exercise of the SpinCo Pre-Funded Warrant.

(b) Notwithstanding anything to the contrary, the Purchasers will not exercise its right to require the filing of a Resale Registration Shelf by SpinCo or cause SpinCo to effect an Underwritten Offering or Block Trade (as such terms are defined in the Registration Statement) until such time as SpinCo is eligible to effect a primary offering using a Registration Statement on Form S-3 pursuant to General Instruction I.B.1 of such form.

4.19 Tax Matters.

(a) Without the consent of the Company, no Purchaser will (or, to the Purchaser's knowledge, will permit any of its Tax-Related Persons to) (i) become a member of a "coordinating group" (within the meaning of Treasury Regulations Section 1.355-7(h)) that includes such Purchaser for purposes of determining whether Section 355(e) of the Code applies as it relates to the Distribution or, (ii) until the date of the Distribution, act pursuant to a "plan or arrangement" (within the meaning of Section 355(d)(7)(B) of the Code) with respect to the acquisition of shares of Company stock or shares of SpinCo stock (including the right to acquire any such shares) with such Purchaser for purposes of determining whether Section 355(d) of the Code applies as it relates to the Distribution, in each case other than together with such Purchaser's Tax-Related Persons, another Purchaser or such other Purchaser's Tax-Related Persons.

(b) Without the consent of Company and other than from the Company or SpinCo in an underwritten offering or pursuant to a privately negotiated transaction, no Purchaser will (or will permit any of its Tax-Related Persons that is an Affiliate of the Purchaser to) acquire, or obtain the right to acquire, shares of Company stock or SpinCo stock that (i) with respect to shares of Company stock, together with the Pre-Existing Holding and the Securities, would result in the Purchasers and their Tax-Related Persons (that are Affiliates of the Purchasers or as to whose ownership of Company Stock the Purchasers have knowledge) owning or having the right to acquire, in the aggregate, shares of Company stock in excess of 15% (by vote or value) of all the shares of Company stock outstanding and (ii) with respect to shares of SpinCo stock, together with the shares of SpinCo stock and/or the SpinCo Pre-Funded Warrants received by the Purchasers and their Tax-Related Persons (that are Affiliates of the Purchasers or as to whose ownership of SpinCo stock the Purchasers have knowledge) as a result of the Distribution (and any shares of SpinCo stock received by such Purchaser (or its Tax-Related Persons that are Affiliates of the Purchaser or as to whose ownership of SpinCo stock the Purchasers have knowledge) upon the exercise of a SpinCo Pre-Funded Warrant), would result in the Purchasers and their Tax-Related Persons (that are Affiliates of the Purchasers or as to whose ownership of SpinCo stock the Purchasers have knowledge) owning or having the right to acquire, in the aggregate, shares of SpinCo stock in excess of 15% (by vote or value) of all the shares of SpinCo stock outstanding. Notwithstanding anything to the contrary in this Agreement, and for the avoidance of doubt solely for purposes of this Section 4.19(b), "Control" shall be determined by reference to vote, and not value.

ARTICLE V.
CONDITIONS PRECEDENT TO CLOSING

5.1 Conditions Precedent to the Obligations of Purchasers. The obligation of each Purchaser to acquire the Purchased Shares at the Closing is subject to the fulfillment to such Purchaser's satisfaction, on or prior to the Closing Date, of each of the following conditions, any of which may be waived by such Purchaser (as to itself only):

(a) Representations and Warranties. The representations and warranties of the Company contained herein shall be true and correct in all material respects as of the date when made and as of the Closing Date, as though made on and as of such date, except for such representations and warranties that speak as of a specific date, which shall be true and correct in all material respects as of such date; *provided, however*, any representations or warranties qualified as to materiality or Material Adverse Effect shall be true and correct in all respects.

(b) Performance. The Company shall have performed, satisfied and complied in all material respects with all covenants, agreements and conditions required by the Transaction Documents to be performed, satisfied or complied with by it at or prior to the Closing.

(c) No Injunction. No statute, rule, regulation, executive order, decree, ruling or injunction shall have been enacted, entered, promulgated or endorsed by any court or governmental authority of competent jurisdiction that prohibits the consummation of any of the transactions contemplated by the Transaction Documents.

(d) Consents. Except for the Stockholder Approval, the Company shall have obtained in a timely fashion any and all consents, permits, approvals, registrations and waivers necessary for consummation of the purchase and sale of the Purchased Shares, all of which shall be and remain so long as necessary in full force and effect.

(e) No Suspensions of Trading in Common Stock; Listing. The Common Stock (i) shall be approved for quotation or listing on the Principal Trading Market and (ii) shall not have been suspended, as of the Closing Date, by the Commission or the Principal Trading Market from trading on the Principal Trading Market.

(f) Company Deliverables. The Company shall have delivered the Company Deliverables in accordance with Section 2.2(a).

(g) Officer's Certificate. The Company shall have delivered to each Purchaser a certificate, dated as of the Closing Date and signed by its Chief Executive Officer or its Chief Financial Officer, dated as of the Closing Date, certifying to the fulfillment of the conditions specified in Sections 5.1(a), 5.1(b), 5.1(c) and 5.1(e), in form and substance reasonably satisfactory to the Purchasers.

(h) No Material Adverse Effect. Since the date of this Agreement, there shall not have occurred a Material Adverse Effect.

5.2 Conditions Precedent to the Obligations of the Company. The Company's obligation to sell and issue Purchased Shares to a Purchaser at the Closing is subject to the fulfillment to the satisfaction of the Company on or prior to the Closing Date of the following conditions, any of which may be waived by the Company:

(a) Representations and Warranties. The representations and warranties made by such Purchaser in Section 3.2 hereof shall be true and correct in all material respects (except for those representations and warranties which are qualified as to materiality, in which case such representations and warranties shall be true and correct in all respects) as of the date when made, and as of the Closing Date as though made on and as of such date, except for representations and warranties that speak as of a specific date.

(b) Performance. Such Purchaser shall have performed, satisfied and complied in all material respects with all covenants, agreements and conditions required by the Transaction Documents to be performed, satisfied or complied with by such Purchaser at or prior to the Closing Date.

(c) Purchaser's Deliverables. Such Purchaser shall have delivered its applicable Purchaser Deliverables in accordance with Section 2.2(b).

ARTICLE VI.
MISCELLANEOUS

6.1 Fees and Expenses. The Company acknowledges that the Lead Investor has expended and is expending significant time and money in connection with this Agreement. In order to induce the Lead Investor to execute this Agreement and to expend the time and resources necessary to effect its investment in the Securities, the Company agrees that in the event (i) Closing is completed under the terms set forth in this Agreement, or (ii) the Closing is not consummated other than due to a breach by the Lead Investor of the terms of this Agreement, the Company will reimburse the Lead Investor for the reasonable documented out-of-pocket expenses of the Lead Investor reasonably incurred in connection with its due diligence and the preparation and negotiation of this Agreement and the transactions contemplated by this Agreement including, but not limited to, the fees and expenses of counsel reasonably incurred by the Lead Investor and its affiliates in connection with the transactions contemplated by this Agreement. Such Lead Investor expense reimbursement will not exceed $75,000 in the aggregate. The Company shall pay all Transfer Agent fees, stamp taxes and other taxes and duties levied in connection with the sale and issuance of the Purchased Shares to the Purchasers, and the Company shall file all necessary tax returns and other documentation with respect to such fees, taxes and duties.

6.2 Entire Agreement. The Transaction Documents, together with the exhibits and schedules thereto, contain the entire understanding of the parties with respect to the subject matter hereof and supersede all prior agreements, understandings, discussions and representations, oral or written, with respect to such matters, which the parties acknowledge have been merged into such documents, exhibits and schedules. At or after the Closing, and without further consideration, the Company and the Purchasers will execute and deliver to the other such further documents as may be reasonably requested in order to give practical effect to the intention of the parties under the Transaction Documents.

6.3 Notices. All notices required or permitted under this Agreement must be in writing and sent to the address identified below. Notices must be given: (a) by personal delivery, with receipt acknowledged; (b) by email followed by hard copy delivered by the methods under clause (c) or (d); (c) by prepaid certified or registered mail, return receipt requested; or (d) by prepaid reputable overnight delivery service. Notices shall be effective upon receipt. Either party may change its notice address by providing the other party written notice of such change. Notices shall be delivered as follows:

If to the Company:	bluebird bio, Inc. 60 Binney Street Cambridge, MA 02142 Attn: Chip Baird Email: [**]
With a copy to:	Goodwin Procter LLP 100 Northern Avenue Boston, MA 02110 Attn: Michael H. Bison, Esq. Email: mbison@goodwinlaw.com
If to a Purchaser:	At the address set forth on the signature page hereto or such other address as may be designated in writing hereafter, in the same manner, by such Person.

6.4 Amendments; Waivers; No Additional Consideration. No provision of this Agreement may be waived or amended except in a written instrument signed, in the case of an amendment, by the Company and each of the Purchasers affected by such amendment or, in the case of a waiver, by the party against whom enforcement of any such waiver is sought. No waiver of any default with respect to any provision, condition or requirement of this Agreement shall be deemed to be a continuing waiver in the future or a waiver of any subsequent default or a waiver of any other provision, condition or requirement hereof, nor shall any delay or omission of either party to exercise any right hereunder in any manner impair the exercise of any such right. No consideration shall be offered or paid to any Purchaser to amend or consent to a waiver or modification of any provision of any Transaction Document unless the same consideration is also offered to all Purchasers who then hold the Securities.

6.5 Construction. The headings herein are for convenience only, do not constitute a part of this Agreement and shall not be deemed to limit or affect any of the provisions hereof. The language used in this Agreement will be deemed to be the language chosen by the parties to express their mutual intent, and no rules of strict construction will be applied against any party. This Agreement shall be construed as if drafted jointly by the parties, and no presumption or burden of proof shall arise favoring or disfavoring any party by virtue of the authorship of any provisions of this Agreement or any of the Transaction Documents.

6.6 Successors and Assigns. Except as otherwise provided in this Agreement, the provisions of this Agreement shall inure to the benefit of and be binding upon the parties and their successors and permitted assigns. This Agreement, or any rights or obligations hereunder, may not be assigned by the Company without the prior written consent of the Purchasers; provided that the Company may, without the consent of the Purchasers, assign its rights or obligations under this Agreement to SpinCo as contemplated by Section 4.19. Except as otherwise provided herein, any Purchaser may assign its rights hereunder in whole or in part to any Person to whom such Purchaser assigns or transfers any Securities in compliance with the Transaction Documents and applicable law, provided such transferee shall agree in writing to be bound, with respect to the transferred Securities, by the terms and conditions of this Agreement that apply to the "Purchasers."

6.7 No Third-Party Beneficiaries. This Agreement is intended for the benefit of the parties hereto and their respective successors and permitted assigns and is not for the benefit of, nor may any provision hereof be enforced by, any other Person, other than Indemnified Persons.

6.8 Governing Law. All questions concerning the construction, validity, enforcement and interpretation of this Agreement shall be governed by and construed and enforced in accordance with the internal laws of the State of New York, without regard to the principles of conflicts of law thereof. Each party agrees that all Proceedings concerning the interpretations, enforcement and defense of the transactions contemplated by this Agreement and any other Transaction Documents (whether brought against a party hereto or its respective Affiliates, employees or agents) may be commenced on a non-exclusive basis in the United States District Court for the Southern District of New York sitting in the borough of Manhattan, New York. Each party hereto hereby irrevocably submits to the non-exclusive jurisdiction of the United States District Court for the Southern District of New York for the adjudication of any dispute hereunder or in connection herewith or with any transaction contemplated hereby or discussed herein (including with respect to the enforcement of any of the Transaction Documents), and hereby irrevocably waives, and agrees not to assert in any Proceeding, any claim that it is not personally subject to the jurisdiction of the United States District Court for the Southern District of New York, or that such Proceeding has been commenced in an improper or inconvenient forum. Each party hereto hereby irrevocably waives personal service of process and consents to process being served in any such Proceeding by mailing a copy thereof via registered or certified mail or overnight delivery (with evidence of delivery) to such party at the address in effect for notices to it under this Agreement and agrees that such service shall constitute good and sufficient service of process and notice thereof. Nothing contained herein shall be deemed to limit in any way any right to serve process in any manner permitted by law.

EACH PARTY HERETO HEREBY IRREVOCABLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY AND ALL RIGHT TO TRIAL BY JURY IN ANY LEGAL PROCEEDING ARISING OUT OF OR RELATING TO THIS AGREEMENT OR THE TRANSACTIONS CONTEMPLATED HEREBY.

6.9 Survival. Subject to applicable statute of limitations, the representations, warranties, agreements and covenants contained herein shall survive the Closing and the delivery of the Purchased Shares and Pre-Funded Warrants.

6.10 Execution. This Agreement may be executed in two or more counterparts, all of which when taken together shall be considered one and the same agreement and shall become effective when counterparts have been signed by each party and delivered to the other party, it being understood that both parties need not sign the same counterpart. In the event that any signature is delivered by facsimile transmission, or by e-mail delivery of a ".pdf" format data file, such signature shall create a valid and binding obligation of the party executing (or on whose behalf such signature is executed) with the same force and effect as if such facsimile signature page were an original thereof.

6.11 Severability. If any provision of this Agreement is held to be invalid or unenforceable in any respect, the validity and enforceability of the remaining terms and provisions of this Agreement shall not in any way be affected or impaired thereby and the parties will attempt to agree upon a valid and enforceable provision that is a reasonable substitute therefor, and upon so agreeing, shall incorporate such substitute provision in this Agreement.

6.12 Replacement of Securities. If any certificate or instrument evidencing any Securities are mutilated, lost, stolen or destroyed, the Company shall issue or cause to be issued in exchange and substitution for and upon cancellation thereof, or in lieu of and substitution therefor, a new certificate or instrument, but only upon receipt of evidence reasonably satisfactory to the Company and the Transfer Agent of such loss, theft or destruction and the execution by the holder thereof of a customary lost certificate affidavit of that fact and an agreement to indemnify and hold harmless the Company and the Transfer Agent for any losses in connection therewith or, if required by the Transfer Agent, a bond in such form and amount as is required by the Transfer Agent. The applicants for a new certificate or instrument under such circumstances shall also pay any reasonable third-party costs associated with the issuance of such replacement Securities. If a replacement certificate or instrument evidencing any Securities is requested due to a mutilation thereof, the Company may require delivery of such mutilated certificate or instrument as a condition precedent to any issuance of a replacement.

6.13 Remedies. In addition to being entitled to exercise all rights provided herein or granted by law, including recovery of damages, each of the Purchasers and the Company will be entitled to seek specific performance under the Transaction Documents. The parties agree that monetary damages may not be adequate compensation for any Loss incurred by reason of any breach of obligations contained in the Transaction Documents and hereby agree to waive and not to assert in any action for specific performance of any such obligation the defense that a remedy at law would be adequate. The Company therefore agrees that the Purchasers shall be entitled to seek temporary and permanent injunctive relief in any such case without the necessity of proving actual damages and without posting a bond or other security.

6.14 Payment Set Aside. To the extent that the Company makes a payment or payments to any Purchaser pursuant to any Transaction Document or a Purchaser enforces or exercises its rights thereunder, and such payment or payments or the proceeds of such enforcement or exercise or any part thereof are subsequently invalidated, declared to be fraudulent or preferential, set aside, recovered from, disgorged by or are required to be refunded, repaid or otherwise restored to the Company, a trustee, receiver or any other person under any law (including, without limitation, any bankruptcy law, state or federal law, common law or equitable cause of action), then to the extent of any such restoration the obligation or part thereof originally intended to be satisfied shall be revived and continued in full force and effect as if such payment had not been made or such enforcement or setoff had not occurred.

6.15 Independent Nature of Purchasers' Obligations and Rights. The obligations of each Purchaser under any Transaction Document are several and not joint with the obligations of any other Purchaser, and no Purchaser shall be responsible in any way for the performance of the obligations of any other Purchaser under any Transaction Document. The decision of each Purchaser to purchase Securities pursuant to the Transaction Documents has been made by such Purchaser independently of any other Purchaser and independently of any information, materials, statements or opinions as to the business, affairs, operations, assets, properties, liabilities, results of operations,

condition (financial or otherwise) or prospects of the Company or any Subsidiary which may have been made or given by any other Purchaser or by any agent or employee of any other Purchaser, and no Purchaser and any of its agents or employees shall have any liability to any other Purchaser (or any other Person) relating to or arising from any such information, materials, statement or opinions. Nothing contained herein or in any Transaction Document, and no action taken by any Purchaser pursuant thereto, shall be deemed to constitute the Purchasers as a partnership, an association, a joint venture or any other kind of entity, or create a presumption that the Purchasers are in any way acting in concert or as a group with respect to such obligations or the transactions contemplated by the Transaction Documents. Each Purchaser acknowledges that no other Purchaser has acted as agent for such Purchaser in connection with making its investment hereunder and that no Purchaser will be acting as agent of such Purchaser in connection with monitoring its investment in the Securities or enforcing its rights under the Transaction Documents. Each Purchaser shall be entitled to independently protect and enforce its rights, including without limitation the rights arising out of this Agreement or out of the other Transaction Documents, and it shall not be necessary for any other Purchaser to be joined as an additional party in any proceeding for such purpose.

6.16 Termination.

(a) This Agreement may be terminated and the sale and purchase of the Purchased Shares and Pre-Funded Warrants may be abandoned at any time prior to the Closing by either the Company or the Purchasers as follows:

(i) upon the mutual written consent of the Company and the Purchasers;

(ii) by the Company if any of the conditions set forth in Section 5.2 shall have become incapable of fulfillment, and shall not have been waived by the Company;

(iii) by a Purchaser (with respect to itself only) if any of the conditions set forth in Section 5.1 shall have become incapable of fulfillment, and shall not have been waived by the Purchaser; or

(iv) by either the Company or any Purchaser (with respect to itself only) if the Closing has not occurred on or prior to September 30, 2021;

provided, however, that, except in the case of clause (iv) above, the party seeking to terminate its obligation to effect the Closing shall not then be in breach of any of its representations, warranties, covenants or agreements contained in this Agreement if such breach has resulted in the circumstances giving rise to such party's seeking to terminate its obligation to effect the Closing.

(b) Nothing in this Section 6.16 shall be deemed to release any party from any liability for any breach by such party of the terms and provisions of this Agreement or the other Transaction Documents or to impair the right of any party to compel specific performance by any other party of its obligations under this Agreement or the other Transaction Documents.

(c) In the event of any termination of this Agreement as provided in this Section 6.16, this Agreement (other than Article VI, which shall remain in full force and effect) shall forthwith become wholly void and of no further force and effect; provided that nothing herein shall relieve any party from liability for intentional breach of this Agreement. Upon a termination in accordance with this Section 6.16, no Purchaser will have any liability to any other Purchaser under the Transaction Documents as a result therefrom.

6.17 Rescission and Withdrawal Right. Notwithstanding anything to the contrary contained in (and without limiting any similar provisions of) the Transaction Documents, whenever any Purchaser exercises a right, election, demand or option under a Transaction Document and the Company does not timely perform its related obligations within the periods therein provided, then such Purchaser may rescind or withdraw, in its sole discretion from time to time upon written notice to the Company, any relevant notice, demand or election in whole or in part without prejudice to its future actions and rights.

6.18 Adjustments in Stock Numbers and Prices; Separation. In the event of any stock split, subdivision, dividend or distribution payable in shares of Common Stock (or other securities or rights convertible into, or entitling the holder thereof to receive directly or indirectly shares of Common Stock), combination or other similar recapitalization or event occurring after the date hereof and prior to Closing, each reference in any Transaction Document to a number of shares or a price per share shall be deemed to be amended to appropriately account for such event. Notwithstanding the foregoing, in connection with the Separation, no such adjustment shall be made other than as expressly contemplated by this Agreement and Pre-Funded Warrant and SpinCo Pre-Funded Warrant.

6.19 No Recourse. Each party hereto covenants, agrees and acknowledges that no person other than a Purchaser has obligations hereunder and that no person shall have any remedy, recourse or right of recovery against, or contribution from, any of Purchaser Related Party, whether through Purchaser or otherwise, by the enforcement of any assessment or by any legal or equitable proceeding, by virtue of any statute, regulation or applicable law, by or through a claim by or on behalf of Purchaser against any Purchaser Related Party, or otherwise. The term "*Purchaser Related Party*" means (1) any Affiliate of Purchaser, (2) any former, current or future general or limited partners, members, managers, stockholders, holders of any equity, partnership or limited liability company interest, officers, directors, employees, agents, controlling persons, investment advisors, or assignees of Purchaser or any of its Affiliates, or (3) any former, current or future general or limited partners, members, managers, stockholders, holders of any equity, partnership or limited liability company interest, officers, directors, employees, agents, controlling persons, assignees, investment advisors or Affiliates of any of the foregoing.

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CERTAIN INFORMATION IN THIS DOCUMENT, MARKED BY [**], HAS BEEN EXCLUDED PURSUANT TO REGULATION S-K, ITEM 601(b)(10)(iv). SUCH EXCLUDED INFORMATION IS NOT MATERIAL AND IS THE TYPE THAT THE REGISTRANT TREATS AS PRIVATE OR CONFIDENTIAL.

IN WITNESS WHEREOF, the parties hereto have caused this Securities Purchase Agreement to be duly executed by their respective authorized signatories as of the date first indicated above.

bluebird bio, Inc.

By: /s/ Chip Baird

Name: Chip Baird

Title: Chief Financial Officer

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK]
[SIGNATURE PAGES FOR PURCHASERS FOLLOW]

667, L.P.

Name of Purchaser (Person or entity in whose name the shares will be registered) Scott L. Lessing, President	Address for notice:		
Name and title of authorized officer (if subscriber is a business entity) By: BAKER BROS. ADVISORS LP, management company and investment advisor to 667, L.P., pursuant to authority granted to it by Baker Biotech Capital, L.P. general partner to 667, L.P., and not as the general partner /s/ Scott L. Lessing	Street		
Signature	City	State	Zip
SSN/Tax ID No.:	Attn:		
	Phone No.:		
	Fax No.:		
	E-mail address:		
Number of shares of Common Stock subscribed for: 165,899 Number of Common Stock underlying Pre-Funded Warrants: 165,899 Total Purchase Price: $5,473,008.01			
Delivery Instructions, if different from above:	c/o		
	Street:		
	City/State/Zip:		
	Attention:		
	Telephone No.:		

BAKER BROTHERS LIFE SCIENCES, L.P.

Name of Purchaser (Person or entity in whose name the shares will be registered) Scott L. Lessing, President	Address for notice:		
Name and title of authorized officer (if subscriber is a business entity) By: BAKER BROS. ADVISORS LP, management company and investment advisor to Baker Brothers Life Sciences, L.P., pursuant to authority granted to it by Baker Brothers Life Sciences Capital, L.P., general partner to Baker Brothers Life Sciences, L.P., and not as the general partner /s/ Scott L. Lessing	Street		
Signature	City	State	Zip
SSN/Tax ID No.:	Attn:		
	Phone No.:		
	Fax No.:		
	E-mail address:		
Number of shares of Common Stock subscribed for: 2,106,828 Number of Common Stock underlying Pre-Funded Warrants: 2,106,828 Total Purchase Price: $69,504,255.72			
Delivery Instructions, if different from above:	c/o		
	Street:		
	City/State/Zip:		
	Attention:		
	Telephone No.:		

SIGNATURE PAGE TO SECURITIES PURCHASE AGREEMENT

CERTAIN INFORMATION IN THIS DOCUMENT, MARKED BY [**], HAS BEEN EXCLUDED PURSUANT TO REGULATION S-K, ITEM 601(b)(10)(iv). SUCH EXCLUDED INFORMATION IS NOT MATERIAL AND IS THE TYPE THAT THE REGISTRANT TREATS AS PRIVATE OR CONFIDENTIAL.

EXHIBIT INDEX

Exhibit A	–	Form of Pre-Funded Warrant
Exhibit B	–	Form of Registration Rights Agreement

Exhibit B
REGISTRATION RIGHTS AGREEMENT

This Registration Rights Agreement (this "Agreement") is made as of September 7, 2021 by and between bluebird bio, Inc., a Delaware corporation (the "Company"), and the persons listed on the attached Schedule A who are signatories to this Agreement (collectively, the "Investors"). Unless otherwise defined herein, capitalized terms used in this Agreement have the respective meanings ascribed to them in Section 1.

RECITALS

WHEREAS, the Company and the Investors wish to provide for certain arrangements with respect to the registration of the Registrable Securities (as defined below) by the Company under the Securities Act (as defined below).

NOW, THEREFORE, in consideration of the mutual promises and covenants set forth herein, and other consideration, the receipt and adequacy of which are hereby acknowledged, the parties hereto agree as follows:

Section 1.
Definitions

1.1 Certain Definitions. In addition to the terms defined elsewhere in this Agreement, as used in this Agreement, the following terms have the respective meanings set forth below:

(a) "Block Trade" shall mean an offering of Registrable Securities which requires both the Investors and the Company to enter into a sale agreement and is limited in scope of selling efforts as compared to an Underwritten Offering.

(b) "Board" shall mean the Board of Directors of the Company.

(c) "Commission" shall mean the Securities and Exchange Commission or any other federal agency at the time administering the Securities Act.

(d) "Common Stock" shall mean the common stock of the Company, par value $0.01 per share.

(e) "Exchange Act" shall mean the Securities Exchange Act of 1934, as amended, or any similar successor federal statute and the rules and regulations thereunder, all as the same shall be in effect from time to time.

(f) "Governmental Entity" shall mean any federal, state, local or foreign government, or any department, agency, or instrumentality of any government; any public international organization, any transnational governmental organization; any court of competent jurisdiction, arbitral, administrative agency, commission, or other governmental regulatory authority or quasi-governmental authority, any political party; and any national securities exchange or national quotation system.

(g) "Other Securities" shall mean securities of the Company, other than Registrable Securities (as defined below).

(h) "Person" shall mean any individual, partnership, corporation, company, association, trust, joint venture, limited liability company, unincorporated organization, entity or division, or any government, governmental department or agency or political subdivision thereof.

(i) "Registrable Securities" shall mean the shares of Common Stock and any Common Stock issued or issuable upon the exercise or conversion of any other securities (whether equity, debt or otherwise) of the Company now owned or hereafter acquired by any of the Investors. Registrable Securities shall cease to be Registrable Securities upon the earliest to occur of the following events: (i) such Registrable Securities have been sold pursuant to an effective Registration Statement; (ii) such Registrable Securities have been sold by the Investors pursuant to Rule 144 (or other similar rule); or (iii) ten (10) years after the date of this Agreement.

(j) The terms "register," "registered" and "registration" shall refer to a registration effected by preparing and filing a Registration Statement in compliance with the Securities Act, and such Registration Statement becoming effective under the Securities Act.

(k) "Registration Expenses" shall mean all expenses incurred by the Company in effecting any registration pursuant to this Agreement, including, without limitation, all registration, qualification, and filing fees, printing expenses, escrow fees, fees and disbursements of counsel for the Company, up to $50,000 of reasonable legal expenses of one special counsel for Investors (if different from the Company's counsel and if such counsel is reasonably approved by the Company) in connection with the preparation and filing of the Resale Registration Shelf (as defined below), and up to $50,000 of reasonable legal expenses of one special counsel for the Investors (if different from the Company's counsel and if such counsel is reasonably approved by the Company) per Underwritten Offering, blue sky fees and expenses, and expenses of any regular or special audits incident to or required by any such registration, but shall not include Selling Expenses.

(l) "Registration Statement" means any registration statement of the Company filed with, or to be filed with, the Commission under the Securities Act, including the related prospectus, amendments and supplements to such registration statement, including pre- and post-effective amendments, and all exhibits and all material incorporated by reference in such registration statement as may be necessary to comply with applicable securities laws other than a registration statement (and related prospectus) filed on Form S-4 or Form S-8 or any successor forms thereto.

(m) "Rule 144" shall mean Rule 144 as promulgated by the Commission under the Securities Act, as such rule may be amended from time to time, or any similar successor rule that may be promulgated by the Commission.

(n) "Securities Act" shall mean the Securities Act of 1933, as amended, or any similar successor federal statute and the rules and regulations thereunder, all as the same shall be in effect from time to time.

(o) "Selling Expenses" shall mean all underwriting discounts and selling commissions applicable to the sale of Registrable Securities, the fees and expenses of any legal counsel (except as provided in the definition of "Registration Expenses") and any other advisors any of the Investors engage and all similar fees and commissions relating to the Investors' disposition of the Registrable Securities.

(p) "Underwritten Offering" shall mean a public offering of Registrable Securities pursuant to an effective registration statement under the Securities Act (other than pursuant to a registration statement on Form S-4 or S-8 or any similar or successor form) which requires the Investors and the Company to enter into an underwriting agreement.

Section 2.
Resale Registration Rights

2.1 Resale Registration Rights.

(a) If the Investor could reasonably be deemed to be an "affiliate" of the Company at such time (as such term is defined and used in Rule 144, assuming that all convertible securities (whether equity, debt or otherwise) have been converted into Common Stock), following demand by such Investor the Company shall file with the Commission a Registration Statement on Form S-3 (except if the Company is not then eligible to register for resale the Registrable Securities on Form S-3, in which case such registration shall be on another appropriate form in accordance with the Securities Act) covering the resale of the Registrable Securities by the Investors (the "Resale Registration Shelf"), and the Company shall file such Resale Registration Shelf as promptly as reasonably practicable following such demand, and in any event within sixty (60) days of such demand. Such Resale Registration Shelf shall include a "final" prospectus, including the information required by Item 507 of Regulation S-K of the Securities Act, as provided by the Investors in accordance with Section 2.7. Notwithstanding the foregoing, before filing the Resale Registration Shelf, the Company shall furnish to the Investors a copy of the Resale Registration Shelf and afford the Investors a reasonable opportunity to review and comment on the Resale Registration Shelf. The Company's obligation pursuant to this Section 2.1(a) is conditioned upon the Investors providing the information contemplated in Section 2.7 in a timely manner. Notwithstanding the foregoing, if the staff of the Commission (the "Staff") or the Commission seeks to characterize any offering pursuant to the Resale Registration Shelf as constituting an offering of securities that does not permit such Resale Registration Shelf to become effective and be used for resales by the Investors under Rule 415, or if after the filing of the Resale Registration Shelf with the Commission pursuant to this Section 2.1(a), the Company is otherwise required by the Staff or the Commission to reduce the number of Registrable

Securities included in the Resale Registration Shelf, then the Company shall reduce the number of Registrable Securities to be included in the Resale Registration Shelf until the Staff and the SEC shall so permit the Resale Registration Shelf to become effective and be used as aforesaid. In the event of any reduction in Registrable Securities pursuant to the immediately preceding sentence, the Company shall file, as soon as permitted by the Staff or the Commission, one or more additional Registration Statements on Form S-3 (except if the Company is not then eligible to register for resale the Registrable Securities on Form S-3, in which case such registration shall be on another appropriate form in accordance with the Securities Act) covering the resale of Registrable Securities by the Investors that have not previously been registered under the Securities Act for resale by the Investors pursuant to Rule 415 until such time as all Registrable Securities have been included in such additional Registration Statement (or in one of such additional Registration Statements) that has or have been declared effective and the prospectus contained therein is available for use by the Investors. The provisions of this Agreement that are applicable to the Resale Registration Shelf shall also be applicable to such additional Registration Statement or each of such additional Registration Statements to the same extent as if such additional Registration Statement were the Resale Registration Shelf. Notwithstanding any provision in this Agreement to the contrary, the Company's obligations to register Registrable Securities (and any related conditions to the Investor's obligations) pursuant to this Agreement shall be qualified as necessary to comport with any requirement of the Commission or the Staff as addressed above in this Section 2.1(a).

(b) The Company shall use its reasonable best efforts to cause the Resale Registration Shelf and related prospectuses to become effective as promptly as practicable after filing. The Company shall use its reasonable best efforts to cause such Registration Statement to remain effective under the Securities Act until the earlier of the date (i) all Registrable Securities covered by the Resale Registration Shelf have been sold or may be sold freely without limitations or restrictions as to volume or manner of sale pursuant to Rule 144 or (ii) all Registrable Securities covered by the Resale Registration Shelf otherwise cease to be Registrable Securities pursuant to the definition of Registrable Securities. The Company shall promptly, and in any event within two (2) business days after the Company confirms effectiveness of the Resale Registration Shelf with the Commission, notify the Investors of the effectiveness of the Resale Registration Shelf.

(c) Notwithstanding anything contained herein to the contrary, the Company shall not be obligated to effect, or to take any action to effect, a registration pursuant to Section 2.1(a):

(i) if the Company has and maintains an effective Registration Statement on Form S-3ASR that provides for the resale of an unlimited number of securities by selling stockholders (a "Company Registration Shelf");

(ii) during the period forty-five (45) days prior to the Company's good faith estimate of the date of filing of a Company Registration Shelf; or

(iii) if the Company has caused a Registration Statement to become effective pursuant to this Section 2.1 during the prior twelve (12) month period.

(d) If the Company has a Company Registration Shelf in place at any time in which the Investors make a demand pursuant to Section 2.1(a), the Company shall file with the Commission, as promptly as practicable, and in any event within fifteen (15) business days after such demand, a "final" prospectus supplement to its Company Registration Shelf covering the resale of the Registrable Securities by the Investors (the "Prospectus"); provided, however, that the Company shall not be obligated to file more than one Prospectus pursuant to this Section 2.1(d) in any six month period to add additional Registrable Securities to the Company Registration Shelf that were acquired by the Investors other than directly from the Company or in an underwritten public offering by the Company. The Prospectus shall include the information required under Item 507 of Regulation S-K of the Securities Act, which information shall be provided by the Investors in accordance with Section 2.7. Notwithstanding the foregoing, before filing the Prospectus, the Company shall furnish to the Investors a copy of the Prospectus and afford the Investors a reasonable opportunity to review and comment on the Prospectus.

(e) Deferral and Suspension. At any time after being obligated pursuant to this Agreement to file a Resale Registration Shelf or Prospectus, or after any Resale Registration Shelf has become effective or a Prospectus is filed with the Commission, the Company may defer the filing of or suspend the use of any such Resale Registration Shelf or Prospectus, upon giving written notice of such action to the Investors with a certificate signed by the Chief Executive Officer or Chief Financial Officer of the Company stating that in the good faith judgment of the Board, the filing or use of any such Resale Registration Shelf or Prospectus covering the Registrable Securities would be seriously detrimental to the Company or its stockholders at such time and that the Board concludes, as a result, that it is in the best interests of the Company and its stockholders to defer the filing or suspend the use of such Resale Registration Shelf or Prospectus at such time. The Company shall have the right to defer the filing of or suspend the use of such Resale Registration Shelf or Prospectus for a period of not more than one hundred twenty (120) days from the date the Company notifies the Investors of such deferral or suspension; provided that the Company shall not exercise the right contained in this Section 2.1(e) more than once in any twelve month period. In the case of the suspension of use of any effective Resale Registration Shelf or Prospectus, the Investors, immediately upon receipt of notice thereof from the Company, shall discontinue any offers or sales of Registrable Securities pursuant to such Resale Registration Shelf or Prospectus until advised in writing by the Company that the use of such Resale Registration Shelf or Prospectus may be resumed. In the case of a deferred Prospectus or Resale Registration Shelf filing, the Company shall provide prompt written notice to the Investors of (i) the Company's decision to file or seek effectiveness of the Prospectus or Resale Registration Shelf, as the case may be, following such deferral and (ii) in the case of a Resale Registration Shelf, the effectiveness of such Resale Registration Shelf. In the case of either a suspension of use of, or deferred filing of, any Resale Registration Shelf or Prospectus, the Company shall not, during the pendency of such suspension or deferral, be required to take any action hereunder (including any action pursuant to Section 2.2 hereof) with respect to the registration or sale of any Registrable Securities pursuant to any such Resale Registration Shelf, Company Registration Shelf or Prospectus.

(f) Other Securities. Subject to Section 2.2(e) below, any Resale Registration Shelf or Prospectus may include Other Securities, and may include securities of the Company being sold

for the account of the Company; provided such Other Securities are excluded first from such Registration Statement in order to comply with any applicable laws or request from any Government Entity, Nasdaq or any applicable listing agency. For the avoidance of doubt, no Other Securities may be included in an Underwritten Offering pursuant to Section 2.2 without the consent of the Investors.

2.2 Sales and Underwritten Offerings of the Registrable Securities.

(a) Notwithstanding any provision contained herein to the contrary, and provided that an Investor could reasonably be deemed to be an "affiliate" of the Company at such time (as such term is defined and used in Rule 144, assuming that all convertible securities (whether equity, debt or otherwise) have been converted into Common Stock), such Investors, collectively, shall and subject to the limitations set forth in this Section 2.2, be permitted (i) one Underwritten Offering per calendar year, but no more than three Underwritten Offerings in total, and (ii) no more than two Underwritten Offerings or Block Trades in any twelve month period, to effect the sale or distribution of Registrable Securities.

(b) If, pursuant to clause (a) above, the Investors intend to effect an Underwritten Offering or Block Trade pursuant to a Resale Registration Shelf or Company Registration Shelf to sell or otherwise distribute Registrable Securities, they shall so advise the Company and provide as much notice to the Company as reasonably practicable (and, in either case, not less than fifteen (15) business days prior to the Investors' request that the Company file a prospectus supplement to a Resale Registration Shelf or Company Registration Shelf).

(c) In connection with any offering initiated by the Investors pursuant to this Section 2.2 involving an underwriting of shares of Registrable Securities, the Investors shall be entitled to select the underwriter or underwriters for such offering, subject to the consent of the Company, such consent not to be unreasonably withheld, conditioned or delayed.

(d) In connection with any offering initiated by the Investors pursuant to this Section 2.2 involving an Underwritten Offering of Registrable Securities, the Company shall not be required to include any of the Registrable Securities in such underwriting unless the Investors (i) enter into an underwriting agreement in customary form with the underwriter or underwriters, (ii) accept customary terms in such underwriting agreement with regard to representations and warranties relating to ownership of the Registrable Securities and authority and power to enter into such underwriting agreement and (iii) complete and execute all questionnaires, powers of attorney, custody agreements, indemnities and other documents as may be requested by such underwriter or underwriters. Further, the Company shall not be required to include any of the Registrable Securities in such underwriting if (Y) the underwriting agreement proposed by the underwriter or underwriters contains representations, warranties or conditions that are not reasonable in light of the Company's then-current business or (Z) the underwriter, underwriters or the Investors require the Company to participate in any marketing, road show or comparable activity that may be required to complete the orderly sale of shares by the underwriter or underwriters.

(e) If the total amount of securities to be sold in any offering initiated by the Investors pursuant to this Section 2.2 involving an underwriting of shares of Registrable Securities exceeds the amount that the underwriters determine in their sole discretion is compatible with the success of the offering, then the Company shall be required to include in the offering only that number of such securities, including Registrable Securities (subject in each case to the cutback provisions set forth in this Section 2.2(e)), that the underwriters and the Company determine in their sole discretion shall not jeopardize the success of the offering. If the Underwritten Offering has been requested pursuant to Section 2.2(a) hereof, the number of shares that are entitled to be included in the registration and underwriting shall be allocated in the following manner: (a) first, shares of Company equity securities that the Company desires to include in such registration shall be excluded and (b) second, Registrable Securities requested to be included in such registration by the Investors shall be excluded. For the avoidance of doubt, no other person besides the Investors shall be entitled to participate in any Block Trade effected under this Agreement. To facilitate the allocation of shares in accordance with the above provisions, the Company or the underwriters may round down the number of shares allocated to any of the Investors to the nearest 100 shares.

2.3 Fees and Expenses. All Registration Expenses incurred in connection with registrations pursuant to this Agreement shall be borne by the Company. All Selling Expenses relating to securities registered on behalf of the Investors shall be borne by the Investors.

2.4 Registration Procedures. In the case of each registration of Registrable Securities effected by the Company pursuant to Section 2.1 hereof, the Company shall keep the Investors advised as to the initiation of each such registration and as to the status thereof. The Company shall use its reasonable best efforts, within the limits set forth in this Section 2.4, to:

(a) prepare and file with the Commission such amendments and supplements to such Registration Statement and the prospectuses used in connection with such Registration Statement as may be necessary to keep such Registration Statement effective and current and comply with the provisions of the Securities Act with respect to the disposition of all securities covered by such Registration Statement;

(b) furnish to the Investors such numbers of copies of a prospectus, including preliminary prospectuses, in conformity with the requirements of the Securities Act, and such other documents as the Investors may reasonably request in order to facilitate the disposition of Registrable Securities;

(c) use its reasonable best efforts to register and qualify the Registrable Securities covered by such Registration Statement under such other securities or blue sky laws of such jurisdictions in the United States as shall be reasonably requested by the Investors, if required by such laws, provided that the Company shall not be required in connection therewith or as a condition thereto to qualify to do business or to file a general consent to service of process in any such states or jurisdictions;

(d) in the event of an Underwritten Offering or Block Trade, and subject to Section 2.2(d), enter into and perform its obligations under an underwriting agreement or Block Trade sale agreement, in usual and customary form (including any “lock-ups” on behalf of the Company

and its directors and officers), with the managing underwriter of such offering and take such other usual and customary action as the Investors may reasonably request in order to facilitate the disposition of such Registrable Securities;

(e) notify the Investors at any time when a prospectus relating to a Registration Statement covering any Registrable Securities is required to be delivered under the Securities Act of the happening of any event as a result of which the prospectus included in such Registration Statement, as then in effect, includes an untrue statement of a material fact or omits to state a material fact required to be stated therein or necessary to make the statements therein not misleading in light of the circumstances in which they were made. The Company shall use its reasonable best efforts to amend or supplement such prospectus in order to cause such prospectus not to include any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading in light of the circumstances in which they were made;

(f) provide a transfer agent and registrar for all Registrable Securities registered pursuant to such Registration Statement and, if required, a CUSIP number for all such Registrable Securities, in each case not later than the effective date of such registration;

(g) if requested by an Investor, use reasonable best efforts to cause the Company's transfer agent to remove any restrictive legend from any Registrable Securities, within two business days following such request;

(h) cause to be furnished, at the request of the Investors, on the date that Registrable Securities are delivered to underwriters for sale in connection with an Underwritten Offering or Block Trade, (i) an opinion, dated such date, of the counsel representing the Company for the purposes of such registration, in form and substance as is customarily given to underwriters in an underwritten public offering, addressed to the underwriters, and (ii) a letter or letters from the independent certified public accountants of the Company, in form and substance as is customarily given by independent certified public accountants to underwriters in an underwritten public offering, addressed to the underwriters; and

(i) cause all such Registrable Securities included in a Registration Statement pursuant to this Agreement to be listed on each securities exchange or other securities trading markets on which Common Stock is then listed.

2.5 The Investors Obligations.

(a) Discontinuance of Distribution. The Investors agree that, upon receipt of any notice from the Company of the occurrence of any event of the kind described in Section 2.4(e) hereof, the Investors shall immediately discontinue disposition of Registrable Securities pursuant to any Registration Statement covering such Registrable Securities until the Investors' receipt of the copies of the supplemented or amended prospectus contemplated by Section 2.4(e) hereof or receipt of notice that no supplement or amendment is required and that the Investors' disposition of the Registrable Securities may be resumed. The Company may provide appropriate stop orders to enforce the provisions of this Section 2.5(a).

(b) Compliance with Prospectus Delivery Requirements. The Investors covenant and agree that they shall comply with the prospectus delivery requirements of the Securities Act as applicable to them or an exemption therefrom in connection with sales of Registrable Securities pursuant to any Registration Statement filed by the Company pursuant to this Agreement.

(c) Notification of Sale of Registrable Securities. The Investors covenant and agree that they shall notify the Company following the sale of Registrable Securities to a third party as promptly as reasonably practicable, and in any event within thirty (30) days, following the sale of such Registrable Securities.

2.6 Indemnification.

(a) To the extent permitted by law, the Company shall indemnify the Investors, and, as applicable, their officers, directors, and constituent partners, legal counsel for each Investor and each Person controlling the Investors, with respect to which registration, related qualification, or related compliance of Registrable Securities has been effected pursuant to this Agreement, and each underwriter, if any, and each Person who controls any underwriter within the meaning of the Securities Act against all claims, losses, damages, or liabilities (or actions in respect thereof) to the extent such claims, losses, damages, or liabilities arise out of or are based upon (i) any untrue statement (or alleged untrue statement) of a material fact contained in any prospectus or other document (including any related Registration Statement) incident to any such registration, qualification, or compliance, or (ii) any omission (or alleged omission) to state therein a material fact required to be stated therein or necessary to make the statements therein not misleading in light of the circumstances in which they were made, or (iii) any violation or alleged violation by the Company of the Securities Act, the Exchange Act, any state securities law, or any rule or regulation promulgated under the Securities Act, the Exchange Act or any state securities law applicable to the Company and relating to action or inaction required of the Company in connection with any such registration, qualification, or compliance; and the Company shall pay as incurred to the Investors, each such underwriter, and each Person who controls the Investors or underwriter, any legal and any other expenses reasonably incurred in connection with investigating or defending any such claim, loss, damage, liability, or action; provided, however, that the indemnity contained in this Section 2.6(a) shall not apply to amounts paid in settlement of any such claim, loss, damage, liability, or action if settlement is effected without the prior written consent of the Company (which consent shall not unreasonably be withheld, conditioned or delayed); and provided, further, that the Company shall not be liable in any such case to the extent that any such claim, loss, damage, liability, or expense arises out of or is based upon any violation by such Investor of the obligations set forth in Section 2.5 hereof or any untrue statement or omission contained in such prospectus or other document based upon written information furnished to the Company by the Investors, such underwriter, or such controlling Person and stated to be for use therein.

(b) To the extent permitted by law, each Investor (severally and not jointly) shall, if Registrable Securities held by such Investor are included for sale in the registration and related qualification and compliance effected pursuant to this Agreement, indemnify the Company, each of its directors, each officer of the Company who signs the applicable Registration Statement, each

legal counsel and each underwriter of the Company's securities covered by such a Registration Statement, each Person who controls the Company or such underwriter within the meaning of the Securities Act against all claims, losses, damages, and liabilities (or actions in respect thereof) arising out of or based upon (i) any untrue statement (or alleged untrue statement) of a material fact contained in any such Registration Statement, or related document, or (ii) any omission (or alleged omission) to state therein a material fact required to be stated therein or necessary to make the statements therein not misleading in light of the circumstances in which they were made, or (iii) any violation or alleged violation by such Investor of Section 2.5 hereof, the Securities Act, the Exchange Act, any state securities law, or any rule or regulation promulgated under the Securities Act, the Exchange Act or any state securities law applicable to such Investor and relating to action or inaction required of such Investor in connection with any such registration and related qualification and compliance, and shall pay as incurred to such persons, any legal and any other expenses reasonably incurred in connection with investigating or defending any such claim, loss, damage, liability, or action, in each case only to the extent that such untrue statement (or alleged untrue statement) or omission (or alleged omission) is made in (and such violation pertains to) such Registration Statement or related document in reliance upon and in conformity with written information furnished to the Company by such Investor and stated to be specifically for use therein; provided, however, that the indemnity contained in this Section 2.6(b) shall not apply to amounts paid in settlement of any such claim, loss, damage, liability, or action if settlement is effected without the prior written consent of such Investor (which consent shall not unreasonably be withheld, conditioned or delayed); provided, further, that such Investor's liability under this Section 2.6(b) (when combined with any amounts such Investor is liable for under Section 2.6(d)) shall not exceed such Investor's net proceeds from the offering of securities made in connection with such registration.

(c) Promptly after receipt by an indemnified party under this Section 2.6 of notice of the commencement of any action, such indemnified party shall, if a claim in respect thereof is to be made against an indemnifying party under this Section 2.6, notify the indemnifying party in writing of the commencement thereof and generally summarize such action. The indemnifying party shall have the right to participate in and to assume the defense of such claim; provided, however, that the indemnifying party shall be entitled to select counsel for the defense of such claim with the approval of any parties entitled to indemnification, which approval shall not be unreasonably withheld, conditioned or delayed; provided further, however, that if either party reasonably determines that there may be a conflict between the position of the Company and the Investors in conducting the defense of such action, suit, or proceeding by reason of recognized claims for indemnity under this Section 2.6, then counsel for such party shall be entitled to conduct the defense to the extent reasonably determined by such counsel to be necessary to protect the interest of such party. The failure to notify an indemnifying party promptly of the commencement of any such action, if prejudicial to the ability of the indemnifying party to defend such action, shall relieve such indemnifying party, to the extent so prejudiced, of any liability to the indemnified party under this Section 2.6, but the omission so to notify the indemnifying party shall not relieve such party of any liability that such party may have to any indemnified party otherwise than under this Section 2.6.

(d) If the indemnification provided for in this Section 2.6 is held by a court of competent jurisdiction to be unavailable to an indemnified party with respect to any loss, liability, claim, damage, or expense referred to therein, then the indemnifying party, in lieu of indemnifying such indemnified party hereunder, shall contribute to the amount paid or payable by such indemnified party as a result of such loss, liability, claim, damage, or expense in such proportion as is appropriate to reflect the relative fault of the indemnifying party on the one hand and of the indemnified party on the other in connection with the statements or omissions that resulted in such loss, liability, claim, damage, or expense as well as any other relevant equitable considerations. The relative fault of the indemnifying party and of the indemnified party shall be determined by reference to, among other things, whether the untrue or alleged untrue statement of a material fact or the omission to state a material fact relates to information supplied by the indemnifying party or by the indemnified party and the parties' relative intent, knowledge, access to information, and opportunity to correct or prevent such statement or omission. In no event, however, shall (i) any amount due for contribution hereunder be in excess of the amount that would otherwise be due under Section 2.6(a) or Section 2.6(b), as applicable, based on the limitations of such provisions and (ii) a Person guilty of fraudulent misrepresentation (within the meaning of the Securities Act) be entitled to contribution from a Person who was not guilty of such fraudulent misrepresentation.

(e) Notwithstanding the foregoing, to the extent that the provisions on indemnification and contribution contained in the underwriting agreement entered into in connection with an Underwritten Offering, or the Block Trade sale agreement in connection with a Block Trade, are in conflict with the foregoing provisions, the provisions in the underwriting agreement or Block Trade sale agreement, as applicable, shall control; provided, however, that the failure of the underwriting agreement or Block Trade agreement to provide for or address a matter provided for or addressed by the foregoing provisions shall not be a conflict between the underwriting agreement or the Block Trade sale agreement and the foregoing provisions.

(f) The obligations of the Company and the Investors under this Section 2.6 shall survive the completion of any offering of Registrable Securities in a Registration Statement under this Agreement or otherwise.

2.7 Information. The Investors shall furnish to the Company such information regarding the Investors and the distribution proposed by the Investors as the Company may reasonably request and as shall be reasonably required in connection with any registration referred to in this Agreement. The Investors agree to, as promptly as practicable (and in any event prior to any sales made pursuant to a prospectus), furnish to the Company all information required to be disclosed in order to make the information previously furnished to the Company by the Investors not misleading in light of the circumstances in which they were made. The Investors agree to keep confidential the receipt of any notice received pursuant to Section 2.4(e) and the contents thereof, except as required pursuant to applicable law. Notwithstanding anything to the contrary herein, the Company shall be under no obligation to name the Investors in any Registration Statement, or to include any Investor's Registrable Securities in any Registration Statement, if the Investors have not provided the information required by this Section 2.7 with respect to the Investors as a selling securityholder in such Registration Statement or any related prospectus.

2.8 Rule 144 Requirements. With a view to making available to the Investors the benefits of Rule 144 under the Securities Act and any other rule or regulation of the Commission that may at any time permit the Investors to sell Registrable Securities to the public without registration, the Company agrees to use its reasonable best efforts to:

(a) make and keep public information available, as those terms are understood and defined in Rule 144 under the Securities Act at all times after the date hereof;

(b) file with the Commission in a timely manner all reports and other documents required of the Company under the Securities Act and the Exchange Act;

(c) prior to the filing of the Registration Statement or any amendment thereto (whether pre-effective or post-effective), and prior to the filing of any prospectus or prospectus supplement related thereto, to provide the Investors with copies of all of the pages thereof (if any) that reference the Investors; and

(d) furnish to any Investor, so long as the Investor owns any Registrable Securities, forthwith upon request (i) a written statement by the Company that it has complied with the reporting requirements of Rule 144, (ii) a copy of the most recent annual or quarterly report of the Company and such other reports and documents so filed by the Company, and (iii) such other information as may be reasonably requested by an Investor in availing itself of any rule or regulation of the Commission which permits an Investor to sell any such securities without registration.

2.9 Limitations on Subsequent Registration Rights. From and after the date of this Agreement, the Company shall not enter into any agreement with any holder or prospective holder of any securities of the Company which would provide to such holder rights with respect to the registration of such securities under the Securities Act or the Exchange Act that would conflict with or adversely affect any of the rights provided to the Investors in this Section 2; it being understood and agreed that any subsequent agreement of the Company with any holder or prospective holder of any securities of the Company of the same class (or convertible into or exchange for securities of the same class) as the Registrable Securities granting such Person rights under this Section 2 equivalent to the rights of the Investors under this Section 2 will not be prohibited by the terms of this Section 2.9.

Section 3.
Miscellaneous

3.1 Amendment. No amendment, alteration or modification of any of the provisions of this Agreement shall be binding unless made in writing and signed by each of the Company and the Investors.

3.2 Injunctive Relief. It is hereby agreed and acknowledged that it shall be impossible to measure in money the damages that would be suffered if the parties fail to comply with any of the obligations herein imposed on them and that in the event of any such failure, an aggrieved Person shall be irreparably damaged and shall not have an adequate remedy at law. Any such

Person shall, therefore, be entitled (in addition to any other remedy to which it may be entitled in law or in equity) to injunctive relief, including, without limitation, specific performance, to enforce such obligations, and if any action should be brought in equity to enforce any of the provisions of this Agreement, none of the parties hereto shall raise the defense that there is an adequate remedy at law.

3.3 Notices. All notices required or permitted under this Agreement must be in writing and sent to the address identified below. Notices must be given: (a) by personal delivery, with receipt acknowledged; (b) by email followed by hard copy delivered by the methods under clause (c) or (d); (c) by prepaid certified or registered mail, return receipt requested; or (d) by prepaid reputable overnight delivery service. Notices shall be effective upon receipt. Either party may change its notice address by providing the other party written notice of such change. Notices shall be delivered as follows:

If to the Investors:	At such Investor's address as set forth on Schedule A hereto
If to the Company:	
If to the Company:	bluebird bio, Inc. 60 Binney Street Cambridge, MA 02142 Attn: Chip Baird Email: [**]
with a copy to:	Goodwin Procter LLP 100 Northern Avenue Boston, MA 02110 Attn: Michael H. Bison, Esq. Email: mbison@goodwinlaw.com

3.4 Governing Law; Jurisdiction; Venue; Jury Trial.

(a) This Agreement shall be governed by, and construed in accordance with, the law of the State of New York without giving effect to any choice or conflict of law provision or rule (whether of the State of New York or any other jurisdiction) that would cause the application of the laws of any jurisdiction other than the State of New York.

(b) Each of the Company and the Investors irrevocably and unconditionally submits, for itself and its property, to the nonexclusive jurisdiction of the courts of the State of New York sitting in the Borough of Manhattan, New York and of the United States District Court of the Southern District of New York, and any appellate court from any thereof, in any action or proceeding arising out of or relating to this Agreement and the transactions contemplated herein, or for recognition or enforcement of any judgment, and each of the Company and the Investors irrevocably and unconditionally agrees that all claims in respect of any such action or proceeding may be heard and determined in such New York state court or, to the fullest extent permitted by applicable law, in such federal court. Each of the Company and the Investors hereto agrees that a

final judgment in any such action or proceeding shall be conclusive and may be enforced in other jurisdictions by suit on the judgment or in any other manner provided by law.

(c) Each of the Company and the Investors irrevocably and unconditionally waives, to the fullest extent permitted by applicable law, any objection that it may now or hereafter have to the laying of venue of any action or proceeding arising out of or relating to this Agreement and the transactions contemplated herein in any court referred to in Section 3.4(b) hereof. Each of the Company and the Investors hereby irrevocably waives, to the fullest extent permitted by applicable law, the defense of an inconvenient forum to the maintenance of such action or proceeding in any such court.

(d) EACH OF THE COMPANY AND THE INVESTORS HEREBY IRREVOCABLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY RIGHT IT MAY HAVE TO A TRIAL BY JURY IN ANY LEGAL PROCEEDING DIRECTLY OR INDIRECTLY ARISING OUT OF OR RELATING TO THIS AGREEMENT OR THE TRANSACTIONS CONTEMPLATED HEREBY (WHETHER BASED ON CONTRACT, TORT OR ANY OTHER THEORY). EACH OF THE COMPANY AND THE INVESTORS (A) CERTIFIES THAT NO REPRESENTATIVE, AGENT OR ATTORNEY OF ANY OTHER PERSON HAS REPRESENTED, EXPRESSLY OR OTHERWISE, THAT SUCH OTHER PERSON WOULD NOT, IN THE EVENT OF LITIGATION, SEEK TO ENFORCE THE FOREGOING WAIVER AND (B) ACKNOWLEDGES THAT EACH OF THE COMPANY AND THE INVESTORS HAS BEEN INDUCED TO ENTER INTO THIS AGREEMENT BY, AMONG OTHER THINGS, THE MUTUAL WAIVERS AND CERTIFICATIONS IN THIS SECTION.

3.5 Successors, Assigns and Transferees. Any and all rights, duties and obligations hereunder shall not be assigned, transferred, delegated or sublicensed by any party hereto without the prior written consent of the other party; provided, however, that the Investors shall be entitled to transfer Registrable Securities to one or more of their affiliates and, solely in connection therewith, may assign their rights hereunder in respect of such transferred Registrable Securities to one or more of their affiliates, in each case, so long as such Investor is not relieved of any liability or obligations hereunder, without the prior consent of the Company. Any transfer or assignment made other than as provided in the first sentence of this Section 3.5 shall be null and void. Subject to the foregoing and except as otherwise provided herein, the provisions of this Agreement shall inure to the benefit of, and be binding upon, the successors, permitted assigns, heirs, executors and administrators of the parties hereto. The Company shall not consummate any recapitalization, merger, consolidation, reorganization or other similar transaction whereby stockholders of the Company receive (either directly, through an exchange, via dividend from the Company or otherwise) equity (the "Other Equity") in any other entity (the "Other Entity") with respect to Registrable Securities hereunder, unless prior to the consummation thereof, the Other Entity assumes, by written instrument, the obligations under this Agreement with respect to such Other Equity as if such Other Equity were Registrable Securities hereunder, provided, that such Other Entity shall not be required to assume such obligations if, upon consummation of such transaction, the Investors would be able to resell the Other Equity without limitations as to volume or manner of sales pursuant to Rule 144.

3.6 Entire Agreement. This Agreement, together with any exhibits hereto, constitute the entire agreement between the parties relating to the subject matter hereof and all previous agreements or arrangements between the parties, written or oral, relating to the subject matter hereof are superseded.

3.7 Waiver. No failure on the part of either party hereto to exercise any power, right, privilege or remedy under this Agreement, and no delay on the part of either party hereto in exercising any power, right, privilege or remedy under this Agreement, shall operate as a waiver thereof; and no single or partial exercise of any such power, right, privilege or remedy shall preclude any other or further exercise thereof or of any other power, right, privilege or remedy.

3.8 Severability. If any part of this Agreement is declared invalid or unenforceable by any court of competent jurisdiction, such declaration shall not affect the remainder of the Agreement and the invalidated provision shall be revised in a manner that shall render such provision valid while preserving the parties' original intent to the maximum extent possible.

3.9 Titles and Subtitles. The titles and subtitles used in this Agreement are used for convenience only and are not to be considered in construing or interpreting this Agreement. All references in this Agreement to sections, paragraphs and exhibits shall, unless otherwise provided, refer to sections and paragraphs hereof and exhibits attached hereto.

3.10 Counterparts. This Agreement may be executed in any number of counterparts, each of which shall be enforceable against the parties that execute such counterparts (including by facsimile or other electronic means), and all of which together shall constitute one instrument.

3.11 Term and Termination. The Investors' rights to demand the registration of the Registrable Securities under this Agreement, as well as the Company's obligations hereunder other than pursuant to Section 2.6 hereof, shall (a) be temporarily suspended if, at any time after the Investors could reasonably be deemed to be an affiliate of the Company, the Investors could no longer reasonably be deemed to be affiliate and such Registrable Securities may be resold by the Investor holding such Registrable Securities without limitations as to volume or manner of sale pursuant to Rule 144 (which rights and obligations shall be reinstated at such time as the Investors could reasonably be deemed to be affiliate) and (b) terminate automatically once all Registrable Securities cease to be Registrable Securities pursuant to the terms of this Agreement. For purposes of this Section 3.11, the term "affiliate" shall have the same meaning as such term is defined and used in Rule 144 (including for determining whether volume or manner of sale limitations of Rule 144 apply) and the parties will assume that all convertible securities (whether equity, debt or otherwise) owned by the Investors (but not those of any other person) have been converted into Common Stock.

[*Remainder of Page Intentionally Left Blank; Signature Page Follows*]

IN WITNESS WHEREOF, the parties hereto have executed this Registration Rights Agreement effective as of the day, month and year first above written.

BLUEBIRD BIO ,INC.

By: /s/ Chip Baird
Name: Chip Baird
Title: Chief Financial Officer

[Signature Page to Registration Rights Agreement]

IN WITNESS WHEREOF, the parties hereto have executed this Registration Rights Agreement effective as of the day, month and year first above written.

667, L.P.

By: BAKER BROS. ADVISORS LP, management company and investment adviser to 667, L.P., pursuant to authority granted to it by Baker Biotech Capital, L.P., general partner to 667, L.P., and not as the general partner

By: /s/ Scott L. Lessing
Scott L. Lessing
President

BAKER BROTHERS LIFE SCIENCES, L.P.

By: BAKER BROS. ADVISORS LP, management company and investment adviser to BAKER BROTHERS LIFE SCIENCES, L.P., pursuant to authority granted to it by Baker Brothers Life Sciences Capital, L.P., general partner to BAKER BROTHERS LIFE SCIENCES, L.P., and not as the general partner

By: /s/ Scott L. Lessing
Scott L. Lessing
President

Schedule A
The Investors

667, L.P.
BAKER BROTHERS LIFE SCIENCES, L.P.

To the above Investors:
Baker Brothers Investments
860 Washington Street
New York, NY 10014
Attn: Scott Lessing
Email: [**]

With a copy to:

Akin Gump Strauss Hauer & Feld LLP
Attn: Jeffrey Kochian
Email: jkochian@akingump.com
One Bryant Park
New York, NY 10036-6745

EMPLOYMENT AGREEMENT

This Employment Agreement ("Agreement") is between 2seventy bio, Inc., a Delaware corporation (the "Company"), and Nick Leschly (the "Executive") effective as of the closing of that certain transaction in which bluebird bio, Inc. ("bluebird") spun-off its oncology business into the Company (the "Transaction," and the closing date the "Effective Date.") If the Transaction does not close, this Agreement shall be null and void *ab initio*. Except for the Prior Obligations (as defined below), this Agreement supersedes in all respects all prior and contemporaneous agreements, representations and communications between the Executive and the Company, and between the Executive and bluebird, regarding the employment of the Executive with either the Company or bluebird, including without limitation the Employment Agreement between the Executive and bluebird dated May 30, 2015 (including any amendments, the "Prior Employment Agreement"). In entering into this Agreement, in consideration for the opportunity to receive the compensation and benefits provided herein, the Executive hereby waives any right or potential right the Executive may have to receive: (i) any severance or change in control compensation or benefits under the Prior Employment Agreement, under any bluebird severance plan or under any other agreement or arrangement with bluebird, and (ii) any compensation or benefits related to the Executive's employment termination or other service relationship termination from bluebird, whether under the Prior Employment Agreement or otherwise.

WHEREAS, the Company desires to employ the Executive and the Executive desires to be employed by the Company on the terms and conditions contained herein.

NOW, THEREFORE, in consideration of the mutual covenants and agreements herein contained and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties agree as follows:

1. Employment.

(a) Term. The term of this Agreement shall commence on the Effective Date and shall continue until terminated in accordance with the provisions of Section 3 (the "Term").

(b) Position and Duties. During the Term, the Executive shall serve as the President and Chief Executive Officer of the Company, and shall have supervision and control over and responsibility for the day-to-day business and affairs of the Company and shall have such other powers and duties as may from time to time be prescribed by the Board of Directors of the Company (the "Board"), provided that such duties are consistent with the Executive's position or other positions that he may hold from time to time. The Executive shall report to the Board. The Executive shall devote his full working time and efforts to the business and affairs of the Company. Notwithstanding the foregoing, the Executive may serve on other boards of directors, with the approval of the Board, or engage in religious, charitable or other community activities as long as such services and activities are disclosed to the Board and do not materially interfere with the Executive's performance of his duties to the Company as provided in this Agreement.

2. Compensation and Related Matters.

(a) Base Salary. During the Term, the Executive's initial annual base salary shall be $750,500. The Executive's base salary shall be redetermined annually by the Board or the Compensation Committee. The annual base salary in effect at any given time is referred to herein as "Base Salary." The Base Salary shall be payable in a manner that is consistent with the Company's usual payroll practices for senior executives.

(b) Incentive Compensation. During the Term, the Executive shall be eligible to receive cash incentive compensation as determined by the Board or the Compensation Committee from time to time. The Executive's target annual incentive compensation shall be 65 percent (65%) of his Base Salary. To earn any incentive compensation, the Executive must be employed by the Company on the day such incentive compensation is paid.

(c) Equity. Any equity awards held by the Executive shall be governed by the terms and conditions of the Company's equity plan, as amended from time to time, and the applicable award agreement(s) governing the terms of such equity awards held by the Executive.

(d) Expenses. The Executive shall be entitled to receive prompt reimbursement for all reasonable expenses incurred by him during the Term in performing services hereunder, in accordance with the policies and procedures then in effect and established by the Company for its senior executive officers.

(e) Other Benefits. During the Term, the Executive shall be eligible to participate in or receive benefits under the Company's employee benefit plans in effect from time to time, subject to the terms of such plans.

(f) Vacations. During the Term, the Executive shall be entitled to paid vacation in accordance with the Company's applicable policy.

3. Termination. During the Term, the Executive's employment hereunder may be terminated without any breach of this Agreement under the following circumstances:

(a) Death. The Executive's employment hereunder shall terminate upon his death.

(b) Disability. The Company may terminate the Executive's employment if he is disabled and unable to perform the essential functions of the Executive's then existing position or positions under this Agreement with or without reasonable accommodation for a period of 180 days (which need not be consecutive) in any 12-month period. If any question shall arise as to whether during any period the Executive is disabled so as to be unable to perform the essential functions of the Executive's then existing position or positions with or without reasonable accommodation, the Executive may, and at the request of the Company shall, submit to the Company a certification in reasonable detail by a physician selected by the Company to whom the Executive or the Executive's guardian has no reasonable objection as to whether the Executive is so disabled or how long such disability is expected to continue, and such certification shall for the purposes of this Agreement be conclusive of the issue. The Executive shall cooperate with any reasonable request of the physician in connection with such certification. If such question shall arise and the Executive shall fail to submit such certification, the Company's determination of such issue shall be binding on the Executive. Nothing in this Section 3(b) shall be construed to waive the Executive's rights, if any, under existing law including, without limitation, the Family and Medical Leave Act of 1993, 29 U.S.C. §2601 *et seq.* and the Americans with Disabilities Act, 42 U.S.C. §12101 *et seq.*

(c) Termination by Company for Cause. The Company may terminate the Executive's employment hereunder for Cause by a vote of the Board at a meeting of the Board called and held for such purpose. For purposes of this Agreement, "Cause" shall mean: (i) the Executive's commission of any felony or commission of any crime involving fraud, dishonesty or moral turpitude; (ii) the Executive's commission or attempted commission of or participation in a fraud or act of dishonesty

against the Company; (iii) the Executive's material breach of any contract or agreement between the Executive and the Company or the Executive's material breach of any legal duty the Executive owes to the Company; (iv) conduct by the Executive that constitutes insubordination, incompetence or neglect of duties; or (v) the Executive's failure to perform the duties, functions and responsibilities of the Executive's position; provided, however, the actions or conduct described in clauses (iv) and (v) above shall only constitute Cause if the Company provides the Executive with written notice thereof and the Executive has not cured within 30 days of such written notice.

(d) Termination Without Cause. The Company may terminate the Executive's employment hereunder at any time without Cause. Any termination by the Company of the Executive's employment under this Agreement which does not constitute a termination for Cause under Section 3(c) and does not result from the death or disability of the Executive under Section 3(a) or (b) shall be deemed a termination without Cause.

(e) Termination by the Executive. The Executive may terminate his employment hereunder at any time for any reason, including but not limited to Good Reason. For purposes of this Agreement, "Good Reason" shall mean that the Executive has complied with the "Good Reason Process" (hereinafter defined) following the occurrence of any of the following events without the Executive's express written consent: (i) a material diminution in the Executive's responsibilities, authority and function; an adverse change to the Executive's job title as Chief Executive Officer, or a change in the Executive's reporting relationship that results in the Executive no longer reporting directly to the Board (ii) a material reduction in the Executive's Base Salary except pursuant to a salary reduction program affecting substantially all of the employees of the Company, provided, that it does not adversely affect the Executive to a greater extent than other similarly situated employees and, provided further, that any reduction in the Executive's Base Salary of more than ten percent (10%) shall constitute Good Reason; (iii) a material change in the geographic location at which the Executive must regularly report to work and provide services to the Company (not including any remote working arrangement, or the cessation of any remote working arrangement, related to the COVID-19 pandemic, and not including travel on Company business); (iv) the material breach by the Company of this Agreement, the Company's equity incentive plan, the agreements governing any stock-based awards made to the Executive or any other material agreement between the Executive and the Company, if any, concerning the terms and conditions of the Executive's employment, benefits or compensation; or (v) the Executive's removal from or failure to be elected to the Board. "Good Reason Process" shall mean that (i) the Executive reasonably determines in good faith that a "Good Reason" condition has occurred; (ii) the Executive notifies the Company in writing of the first occurrence of the Good Reason condition within 60 days of the first occurrence of such condition; (iii) the Executive cooperates in good faith with the Company's efforts, for a period not less than 30 days following such notice (the "Cure Period") to remedy the condition; (iv) notwithstanding such efforts, the Good Reason condition continues to exist; and (v) the Executive terminates his employment within 60 days after the end of the Cure Period. If the Company cures the Good Reason condition during the Cure Period, Good Reason shall be deemed not to have occurred.

(f) Notice of Termination. Except for termination as specified in Section 3(a), any termination of the Executive's employment by the Company or any such termination by the Executive shall be communicated by written Notice of Termination to the other party hereto. For purposes of this Agreement, a "Notice of Termination" shall mean a notice which shall indicate the specific termination provision in this Agreement relied upon.

(g) Date of Termination. "Date of Termination" shall mean: (i) if the Executive's employment is terminated by his death, the date of his death; (ii) if the Executive's employment is terminated on account of disability under Section 3(b) or by the Company for Cause under Section 3(c), the date on which Notice of Termination is given; (iii) if the Executive's employment is terminated by the Company under Section 3(d), the date on which a Notice of Termination is given or the date otherwise specified by the Company in the Notice of Termination; (iv) if the Executive's employment is terminated by the Executive under Section 3(e) without Good Reason, 30 days after the date on which a Notice of Termination is given, and (v) if the Executive's employment is terminated by the Executive under Section 3(e) with Good Reason, the date on which a Notice of Termination is given after the end of the Cure Period. Notwithstanding the foregoing, (A) in the event that the Executive gives a Notice of Termination to the Company, the Company may unilaterally accelerate the Date of Termination and such acceleration shall not result in a termination by the Company for purposes of this Agreement, and (B) in the event that the Company terminates the Executive's employment without Cause under Section 3(d), the Company may unilaterally accelerate the Date of Termination to any earlier effective date provided that the Company continues to pay the Executive the Base Salary for the 30-day period immediately following the date on which a Notice of Termination is given to the Executive.

4. Compensation Upon Termination.

(a) Termination Generally. If the Executive's employment with the Company is terminated for any reason, the Company shall pay or provide to the Executive (or to his authorized representative or estate) (i) any Base Salary earned through the Date of Termination, unpaid expense reimbursements (subject to, and in accordance with, Section 2(c) of this Agreement) and unused vacation that accrued through the Date of Termination on or before the time required by law but in no event more than 30 days after the Executive's Date of Termination; and (ii) any vested benefits the Executive may have under any employee benefit plan of the Company through the Date of Termination, which vested benefits shall be paid and/or provided in accordance with the terms of such employee benefit plans (collectively, the "Accrued Benefit"). To the extent applicable, the Executive shall be deemed to have resigned from all applicable officer, board member and other positions that the Executive holds with the Company or any of its respective subsidiaries and affiliates upon the termination of the Executive's employment for any reason. The Executive shall execute any documents in reasonable form as may be requested to confirm or effectuate any such resignations.

(b) Termination by the Company Without Cause or by the Executive with Good Reason. During the Term, if the Executive's employment is terminated by the Company without Cause as provided in Section 3(d), or the Executive terminates his employment for Good Reason as provided in Section 3(e), then the Company shall pay the Executive his Accrued Benefit. In addition, subject to the Executive signing a separation agreement in a form and manner satisfactory to the Company containing, among other provisions, a general release of claims in favor of the Company and related persons and entities, confidentiality, return of property, non-disparagement, a reaffirmation of all of the Executive's Continuing Obligations (as defined below), and, in the Company's sole discretion, a one-year post-employment noncompetition provision, (the "Separation Agreement and Release") and the Separation Agreement and Release becoming fully effective, all within 60 days after the Date of Termination (or such shorter period as the time frame set forth in the Separation Agreement and Release):

(i) the Company shall pay the Executive an amount equal to one times the Executive's Base Salary (the "Severance Amount"); *provided* that in the event the Executive is entitled to any payments pursuant to the Restrictive Covenants Agreement, the Severance

Amount received in any calendar year will be reduced by the amount the Executive is paid in the same such calendar year pursuant to the Restrictive Covenants Agreement (the "Restrictive Covenants Agreement Setoff"); and

(ii) if the Executive was participating in the Company's group health plan immediately prior to the Date of Termination and elects COBRA health continuation, then the Company shall pay to the Executive a monthly cash payment for 12 months or the Executive's COBRA health continuation period, whichever ends earlier, in an amount equal to the monthly employer contribution that the Company would have made to provide health insurance to the Executive if the Executive had remained employed by the Company; and

(iii) the amounts payable under this Section 4(b) shall be paid out in substantially equal installments in accordance with the Company's payroll practice over 12 months commencing within 60 days after the Date of Termination; provided, however, that if the 60-day period begins in one calendar year and ends in a second calendar year, the Severance Amount shall begin to be paid in the second calendar year by the last day of such 60-day period; provided, further, that the initial payment shall include a catch-up payment to cover amounts retroactive to the day immediately following the Date of Termination. Each payment pursuant to this Agreement is intended to constitute a separate payment for purposes of Treasury Regulation Section 1.409A-2(b)(2).

(iv) The receipt of any severance payments or benefits pursuant to Section 4 will be subject to Executive not violating the Restrictive Covenant Agreement referenced in Section 7 of this Agreement and attached hereto as Exhibit A, the terms of which are hereby incorporated by reference. In the event Executive breaches the Restrictive Covenant Agreement, in addition to all other legal and equitable remedies, the Company shall have the right to terminate or suspend all continuing payments and benefits to which Executive may otherwise be entitled pursuant to Section 4 without affecting the Executive's release or Executive's obligations under the Separation Agreement and Release.

5. Change in Control Payment. The provisions of this Section 5 set forth certain terms of an agreement reached between the Executive and the Company regarding the Executive's rights and obligations upon the occurrence of a Change in Control of the Company. These provisions are intended to assure and encourage in advance the Executive's continued attention and dedication to his assigned duties and his objectivity during the pendency and after the occurrence of any such event. These provisions shall apply in lieu of, and expressly supersede, the provisions of Section 4(b) regarding severance pay and benefits upon a termination of employment, if such termination of employment occurs within 12 months after the occurrence of the first event constituting a Change in Control. These provisions shall terminate and be of no further force or effect beginning 12 months after the occurrence of a Change in Control.

(a) Change in Control. During the Term, if within 12 months after a Change in Control, the Executive's employment is terminated by the Company without Cause as provided in Section 3(d) or the Executive terminates his employment for Good Reason as provided in Section 3(e), then, subject to the signing of the Separation Agreement and Release by the Executive and the Separation

Agreement and Release becoming irrevocable, all within the time frame set forth in the Separation Agreement and Release but in no event more than 60 days after the Date of Termination.

(i) the Company shall pay the Executive a lump sum in cash in an amount equal to one and a half times the sum of (A) the Executive's then-current Base Salary (or the Executive's Base Salary in effect immediately prior to the Change in Control, if higher) plus (B) the Executive's Target Incentive Compensation Bonus for the then-current year (or the Executive's Target Bonus in effect immediately prior to the Change in Control, if higher) (the "Change in Control Payment"). For purposes of this Agreement, "Target Incentive Compensation" shall mean the Executive's target annual incentive compensation as set forth in Section 2(b); provided that the Change in Control Payment shall be reduced by the amount of the Restrictive Covenants Agreement Setoff, if applicable; and

(ii) notwithstanding anything to the contrary in any applicable option agreement or stock-based award agreement, all stock options and other stock-based awards granted to the Executive after the date of this Agreement that are subject to time-based vesting shall immediately accelerate and become fully vested and exercisable or nonforfeitable as of the later of (i) the Date of Termination and (ii) the effective date of the Separation Agreement and Release. Except as provided in this subsection, the treatment of stock options and other stock-based awards held by the Executive as of the date of this Agreement shall be governed by the terms of the applicable option agreement or other stock-based award agreement.

(iii) if the Executive was participating in the Company's group health plan immediately prior to the Date of Termination and elects COBRA health continuation, then the Company shall pay to the Executive a monthly cash payment for 18 months or the Executive's COBRA health continuation period, whichever ends earlier, in an amount equal to the monthly employer contribution that the Company would have made to provide health insurance to the Executive if the Executive had remained employed by the Company; and

(iv) The amounts payable under this Section 5(a) shall be paid or commence to be paid within 60 days after the Date of Termination; provided, however, that if the 60-day period begins in one calendar year and ends in a second calendar year, such payments shall be paid or commence to be paid in the second calendar year by the last day of such 60-day period.

(b) Additional Limitation.

(i) Anything in this Agreement to the contrary notwithstanding, in the event that the amount of any compensation, payment or distribution by the Company to or for the benefit of the Executive, whether paid or payable or distributed or distributable pursuant to the terms of this Agreement or otherwise, calculated in a manner consistent with Section 280G of the Internal Revenue Code of 1986, as amended (the "Code") and the applicable regulations thereunder (the "Severance Payments"), would be subject to the excise tax imposed by Section 4999 of the Code, the following provisions shall apply:

(A) If the Severance Payments, reduced by the sum of (1) the Excise Tax and (2) the total of the federal, state, and local income and employment taxes payable by the Executive on the amount of the Severance Payments which are in excess of the Threshold Amount, are greater than or equal to the Threshold Amount, the Executive shall be entitled to the full benefits payable under this Agreement.

(B) If the Threshold Amount is less than (x) the Severance Payments, but greater than (y) the Severance Payments reduced by the sum of (1) the Excise Tax and (2) the total of the federal, state, and local income and employment taxes on the amount of the Severance Payments which are in excess of the Threshold Amount, then the Severance Payments shall be reduced (but not below zero) to the extent necessary so that the sum of all Severance Payments shall not exceed the Threshold Amount. In such event, the Severance Payments shall be reduced in the following order: (1) cash payments not subject to Section 409A of the Code; (2) cash payments subject to Section 409A of the Code; (3) equity-based payments and acceleration; and (4) non-cash forms of benefits. To the extent any payment is to be made over time (e.g., in installments, etc.), then the payments shall be reduced in reverse chronological order.

(ii) For the purposes of this Section 5(b), "Threshold Amount" shall mean three times the Executive's "base amount" within the meaning of Section 280G(b)(3) of the Code and the regulations promulgated thereunder less one dollar ($1.00); and "Excise Tax" shall mean the excise tax imposed by Section 4999 of the Code, and any interest or penalties incurred by the Executive with respect to such excise tax.

(iii) The determination as to which of the alternative provisions of Section 5(b)(i) shall apply to the Executive shall be made by a nationally recognized accounting firm selected by the Company (the "Accounting Firm"), which shall provide detailed supporting calculations both to the Company and the Executive within 15 business days of the Date of Termination, if applicable, or at such earlier time as is reasonably requested by the Company or the Executive. For purposes of determining which of the alternative provisions of Section 5(b)(i) shall apply, the Executive shall be deemed to pay federal income taxes at the highest marginal rate of federal income taxation applicable to individuals for the calendar year in which the determination is to be made, and state and local income taxes at the highest marginal rates of individual taxation in the state and locality of the Executive's residence on the Date of Termination, net of the maximum reduction in federal income taxes which could be obtained from deduction of such state and local taxes. Any determination by the Accounting Firm shall be binding upon the Company and the Executive.

(c) Definitions. For purposes of this Section 5, the following terms shall have the following meanings:

"Change in Control" shall mean "Sale Event," as such term is defined in the Company's 2021 Stock Option and Incentive Plan.

6. Section 409A.

(a) Anything in this Agreement to the contrary notwithstanding, if at the time of the Executive's separation from service within the meaning of Section 409A of the Code, the Company determines that the Executive is a "specified employee" within the meaning of Section 409A(a)(2)(B)(i) of the Code, then to the extent any payment or benefit that the Executive becomes entitled to under this Agreement on account of the Executive's separation from service would be considered deferred compensation otherwise subject to the 20 percent additional tax imposed pursuant to Section 409A(a) of the Code as a result of the application of Section 409A(a)(2)(B)(i) of the Code, such payment shall not be payable and such benefit shall not be provided until the date that is the earlier of (A) six months and one

day after the Executive's separation from service, or (B) the Executive's death. If any such delayed cash payment is otherwise payable on an installment basis, the first payment shall include a catch-up payment covering amounts that would otherwise have been paid during the six-month period but for the application of this provision, and the balance of the installments shall be payable in accordance with their original schedule.

(b) All in-kind benefits provided and expenses eligible for reimbursement under this Agreement shall be provided by the Company or incurred by the Executive during the time periods set forth in this Agreement. All reimbursements shall be paid as soon as administratively practicable, but in no event shall any reimbursement be paid after the last day of the taxable year following the taxable year in which the expense was incurred. The amount of in-kind benefits provided or reimbursable expenses incurred in one taxable year shall not affect the in-kind benefits to be provided or the expenses eligible for reimbursement in any other taxable year (except for any lifetime or other aggregate limitation applicable to medical expenses). Such right to reimbursement or in-kind benefits is not subject to liquidation or exchange for another benefit.

(c) To the extent that any payment or benefit described in this Agreement constitutes "non-qualified deferred compensation" under Section 409A of the Code, and to the extent that such payment or benefit is payable upon the Executive's termination of employment, then such payments or benefits shall be payable only upon the Executive's "separation from service." The determination of whether and when a separation from service has occurred shall be made in accordance with the presumptions set forth in Treasury Regulation Section 1.409A-l(h).

(d) The parties intend that this Agreement will be administered in accordance with Section 409A of the Code. To the extent that any provision of this Agreement is ambiguous as to its compliance with Section 409A of the Code, the provision shall be read in such a manner so that all payments hereunder comply with Section 409A of the Code. Each payment pursuant to this Agreement or the Restrictive Covenant Agreement is intended to constitute a separate payment for purposes of Treasury Regulation Section 1.409A-2(b)(2). The parties agree that this Agreement may be amended, as reasonably requested by either party, and as may be necessary to fully comply with Section 409A of the Code and all related rules and regulations in order to preserve the payments and benefits provided hereunder without additional cost to either party.

(e) The Company makes no representation or warranty and shall have no liability to the Executive or any other person if any provisions of this Agreement are determined to constitute deferred compensation subject to Section 409A of the Code but do not satisfy an exemption from, or the conditions of, such Section.

7. Continuing Obligations.; Restrictive Covenants Agreement. As a condition of employment, the Executive is required to enter into the Employee Confidentiality, Assignment, Nonsolicitation and Noncompetition Agreement, attached hereto as Exhibit A (the "Restrictive Covenants Agreement"). The Executive acknowledges and agrees that the Executive received the Restrictive Covenants Agreement with this Agreement and at least ten (10) business days before the commencement of the Executive's employment with the Company. The Executive's confidentiality and restrictive covenant obligations to bluebird bio (the "Prior Obligations") will be or have been assigned to the Company in the Transaction, to which assignment the Executive hereby consents, and such Prior Obligations remain in full effect. For purposes of this Agreement, the obligations in this Section, those contained in the Restrictive Covenants Agreement and any other agreement relating to confidentiality,

assignment of inventions, or other restrictive covenants, including without limitation the Prior Obligations, shall collectively be referred to as the "Continuing Obligations."

8. Consent to Jurisdiction. The parties hereby consent to the jurisdiction of the Superior Court of the Commonwealth of Massachusetts and the United States District Court for the District of Massachusetts. Accordingly, with respect to any such court action, the Executive (a) submits to the personal jurisdiction of such courts; (b) consents to service of process; and (c) waives any other requirement (whether imposed by statute, rule of court, or otherwise) with respect to personal jurisdiction or service of process.

9. Integration. This Agreement constitutes the entire agreement between the parties with respect to the subject matter hereof and supersedes all prior agreements between the parties concerning such subject matter; including the Prior Agreement, provided that the Prior Obligations remain in full force and effect.

10. Withholding. All payments made by the Company to the Executive under this Agreement shall be net of any tax or other amounts required to be withheld by the Company under applicable law.

11. Assignment; Successors and Assigns. Neither the Executive nor the Company may make any assignment of this Agreement or any interest in it, by operation of law or otherwise, without the prior written consent of the other; *provided*, *however*, that the Company may assign its rights and obligations under this Agreement (including the Restrictive Covenants Agreement and the Prior Obligations) without the Executive's consent to any affiliate or to any person or entity with whom the Company shall hereafter effect a reorganization or consolidation, into which the Company merges or to whom it transfers all or substantially all of its properties or assets; *provided*, *further* that if the Executive remains employed or becomes employed by the Company, the purchaser or any of their affiliates in connection with any such transaction, then the Executive shall not be entitled to any payments, benefits or vesting pursuant to Section 5 or pursuant to Section 6 of this Agreement solely as a result of such transaction. This Agreement shall inure to the benefit of and be binding upon the Executive and the Company, and each of the Executive's and the Company's respective successors, executors, administrators, heirs and permitted assigns.

12. Enforceability. If any portion or provision of this Agreement (including, without limitation, any portion or provision of any section of the Restrictive Covenant Agreement) shall to any extent be declared illegal or unenforceable by a court of competent jurisdiction, then the remainder of this Agreement, or the application of such portion or provision in circumstances other than those as to which it is so declared illegal or unenforceable, shall not be affected thereby, and each portion and provision of this Agreement shall be valid and enforceable to the fullest extent permitted by law.

13. Survival. The provisions of this Agreement shall survive the termination of this Agreement and/or the termination of the Executive's employment to the extent necessary to effectuate the terms contained herein.

14. Waiver. No waiver of any provision hereof shall be effective unless made in writing and signed by the waiving party. The failure of any party to require the performance of any term or obligation of this Agreement, or the waiver by any party of any breach of this Agreement, shall not prevent any subsequent enforcement of such term or obligation or be deemed a waiver of any subsequent breach.

15. Notices. Any notices, requests, demands and other communications provided for by this Agreement shall be sufficient if in writing and delivered in person or sent by a nationally recognized overnight courier service or by registered or certified mail, postage prepaid, return receipt requested, to the Executive at the last address the Executive has filed in writing with the Company or, in the case of the Company, at its main offices, attention of the Board.

16. Amendment. This Agreement may be amended or modified only by a written instrument signed by the Executive and by a duly authorized representative of the Company.

17. Effect on Other Plans and Agreements. Except for the Restrictive Covenants Agreement, in the event that the Executive is party to an agreement with the Company providing for payments or benefits under such plan or agreement and under this Agreement, the terms of this Agreement shall govern and the Executive may receive payment under this Agreement only and not both. Further, Section 5 and Section 6 of this Agreement are mutually exclusive and in no event shall the Executive be entitled to payments or benefits pursuant to both Section 5 and Section 6 of this Agreement.

18. Governing Law. This is a Massachusetts contract and shall be construed under and be governed in all respects by the laws of the Commonwealth of Massachusetts, without giving effect to the conflict of laws principles of such Commonwealth. With respect to any disputes concerning federal law, such disputes shall be determined in accordance with the law as it would be interpreted and applied by the United States Court of Appeals for the First Circuit.

19. Counterparts. This Agreement may be executed in any number of counterparts, each of which when so executed and delivered shall be taken to be an original; but such counterparts shall together constitute one and the same document.

20. Gender Neutral. Wherever used herein, a pronoun in the masculine gender shall be considered as including the feminine gender unless the context clearly indicates otherwise.

IN WITNESS WHEREOF, the parties have executed this Agreement effective on the Effective Date.

2SEVENTY BIO, INC.

By: /s/ William Baird

Its: Treasurer

/s/ Nick Leschly

Nick Leschly

EMPLOYMENT AGREEMENT

This Employment Agreement ("Agreement") is between 2Seventy Bio, Inc., a Delaware corporation (the "Company"), and Mr. William ("Chip") Baird (the "Executive") effective as of the closing of that certain transaction in which Bluebird Bio, Inc. ("bluebird") spun-off its oncology business into the Company (the "Transaction," and the closing date the "Effective Date.") If the Transaction does not close, this Agreement shall be null and void *ab initio*. Except for the Prior Obligations (as defined below), this Agreement supersedes in all respects all prior and contemporaneous agreements, representations and communications between the Executive and the Company, and between the Executive and bluebird, regarding the employment of the Executive with either the Company or bluebird, including without limitation the Employment Agreement between the Executive and bluebird dated December 18, 2018 (including any amendments, the "Prior Employment Agreement"). In entering into this Agreement, in consideration for the opportunity to receive the compensation and benefits provided herein, the Executive hereby waives any right or potential right the Executive may have to receive: (i) any severance or change in control compensation or benefits under the Prior Employment Agreement, under any bluebird severance plan or under any other agreement or arrangement with bluebird, and (ii) any compensation or benefits related to the Executive's employment termination or other service relationship termination from bluebird, whether under the Prior Employment Agreement or otherwise.

WHEREAS, the Company desires to employ the Executive and the Executive desires to be employed by the Company on the terms and conditions contained herein.

NOW, THEREFORE, in consideration of the mutual covenants and agreements herein contained and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties agree as follows:

1. Employment.

(a) Term. The term of this Agreement shall commence on the Effective Date and shall continue until terminated in accordance with the provisions of Section 3 (the "Term").

(b) Position and Duties. During the Term, the Executive shall serve as the Chief Financial Officer, and shall have such powers and duties as may from time to time be prescribed by the Chief Executive Officer of the Company (the "CEO") or other authorized executive, provided that such duties are consistent with the Executive's position or other positions that he may hold from time to time. The Executive shall report to the CEO. The Executive shall devote his full working time and efforts to the business and affairs of the Company. Notwithstanding the foregoing, the Executive may serve on boards of directors of another company, with the prior written approval of the Company's Board of Directors (the "Board"), and may engage in religious, charitable or other community activities as long as such services and activities do not pose a conflict of interest or interfere with the Executive's performance of his duties to the Company as provided in this Agreement.

2. Compensation and Related Matters.

(a) Base Salary. Executive's base salary rate shall be $491,300 per year. The Executive's base salary shall be redetermined annually by the Board or the Compensation Committee of the Board of Directors (the "Compensation Committee"). The annual base salary rate in effect at any given time is referred to herein as "Base Salary." The Executive's Base Salary shall be payable in a manner that is consistent with the Company's usual payroll practices for senior executives.

(b) Incentive Compensation. The Executive shall be eligible to receive cash incentive compensation as determined by the Board or the Compensation Committee from time to time. The Executive's target annual incentive compensation shall be 45 percent (45%) of his Base Salary, although any the actual incentive compensation amount shall be discretionary. To earn any incentive compensation, the Executive must be employed by the Company on the day such incentive compensation is paid.

(c) Relocation. During the Term and until the earlier of (i) December 18, 2021 or (ii) Executive's permanent relocation to the Cambridge, MA, the Company shall pay Executive, on the Company's regular payroll cycle, for the Executive's cost of temporary living arrangements reasonably acceptable to the Company, grossed up for the Executive's anticipated income tax liability. Executive is eligible for relocation services offered through a third-party provider engaged by the Company, subject to the policies and procedures in effect and established by the Company for its senior executive officers.

(d) Equity. Any equity awards held by the Executive shall be governed by the terms and conditions of the Company's equity plan, as amended from time to time, and the applicable award agreement(s) governing the terms of such equity awards held by the Executive.

(e) Expenses. The Executive shall be entitled to receive prompt reimbursement for all reasonable expenses incurred by him during the Term in performing services hereunder, in accordance with the policies and procedures then in effect and established by the Company for its senior executive officers.

(f) Other Benefits. During the Term, the Executive shall be eligible to participate in or receive benefits under the Company's employee benefit plans in effect from time to time, subject to the terms and conditions of such plans.

(g) Vacations. During the Term, the Executive shall be entitled to paid vacation in accordance with the Company's applicable policy.

3. Termination. During the Term, the Executive's employment hereunder may be terminated without any breach of this Agreement under the following circumstances:

(a) Death. The Executive's employment hereunder shall terminate upon his death.

(b) Disability. The Company may terminate the Executive's employment if he is disabled and unable to perform the essential functions of the Executive's then existing position or positions under this Agreement with or without reasonable accommodation for a period of 180 days (which need not be consecutive) in any 12-month period. If any question shall arise as to whether during any period the Executive is disabled so as to be unable to perform the essential functions of the Executive's then existing position or positions with or without reasonable accommodation, the Executive may, and at the request of the Company shall, submit to the Company a certification in reasonable detail by a physician selected by the Company to whom the Executive or the Executive's guardian has no reasonable objection as to whether the Executive is so disabled or how long such disability is expected to continue, and such certification shall for the purposes of this Agreement be conclusive of the issue. The Executive shall cooperate with any reasonable request of the physician in connection with such certification. If such question shall arise and the Executive shall fail to submit such certification, the Company's determination of such issue shall be binding on the Executive. Nothing in this Section 3(b) shall be construed to waive the Executive's rights, if any, under existing law including, without limitation, the Family and Medical Leave Act of 1993,29 U.S.C. §2601 *et seq.* and the Americans with Disabilities Act, 42 U.S.C. §12101 *et seq.*

(c) Termination by Company for Cause. The Company may terminate the Executive's employment hereunder for Cause. For purposes of this Agreement, "Cause" shall mean: (i) the Executive's dishonest statements or acts with respect to the Company, any affiliate of the Company or any of the Company's current or prospective customers, suppliers, vendors or other third parties with which such entity does business; (ii) the Executive's commission of a felony or any misdemeanor involving moral turpitude, deceit, dishonesty or fraud; (iii) the Executive's failure to perform his assigned duties to the reasonable satisfaction of the Company, which failure, if curable, continues, in the reasonable judgment of the Company, after written notice given to the Executive by the Company; (iv) the Executive's gross negligence, willful misconduct or insubordination with respect to the Company or any affiliate of the Company; or (v) the Executive's violation of any provision of any agreement(s) between the Executive and the Company relating to noncompetition, nonsolicitation, nondisclosure and/or assignment of inventions.

(d) Termination Without Cause. The Company may terminate the Executive's employment hereunder at any time without Cause. Any termination by the Company of the Executive's employment under this Agreement which does not constitute a termination for Cause under Section 3(c) and does not result from the death or disability of the Executive under Section 3(a) or (b) shall be deemed a termination without Cause.

(e) Termination by the Executive. The Executive may terminate his employment hereunder at any time for any reason, including but not limited to Good Reason. For purposes of this Agreement, "Good Reason" shall mean that the Executive has complied with the "Good Reason Process" (hereinafter defined) following the occurrence of any of the following events without the Executive's express written consent: (i) a material diminution in the Executive's responsibilities, authority and function; (ii) a material reduction in the Executive's Base Salary except pursuant to a salary reduction program affecting substantially all of the employees of the Company, provided, that it does not adversely affect the Executive to a greater extent than other similarly situated employees and, provided further, that any reduction in the Executive's Base Salary of more than ten percent (10%) shall constitute Good Reason; (iii) a material change of more than 30 miles in the geographic location at which the Executive must provide services to the Company (not including any remote working arrangement, or the cessation of any remote working arrangement, related to the COVID-19 pandemic, and not including travel on Company business to an extent substantially consistent with the Executive's usual business travel obligations); or (iv) the material breach by the Company of the Company's equity incentive plan or the stock option agreement governing the stock option granted to the Executive, if any, or any other material agreement between the Executive and the Company, if any, concerning the terms and conditions of the Executive's employment, benefits or compensation. "Good Reason Process" shall mean that (i) the Executive reasonably determines in good faith that a "Good Reason" condition has occurred; (ii) the Executive notifies the Company in writing of the first occurrence of the Good Reason condition within 60 days of the first occurrence of such condition; (iii) the Executive cooperates in good faith with the Company's efforts, for a period not less than 30 days following such notice (the "Cure Period") to remedy the condition; (iv) notwithstanding such efforts, the Good Reason condition continues to exist; and (v) the Executive terminates his employment within 60 days after the end of the Cure Period. If the Company cures the Good Reason condition during the Cure Period, Good Reason shall be deemed not to have occurred.

(f) Notice of Termination. Except for termination as specified in Section 3(a), any termination of the Executive's employment by the Company or any such termination by the Executive shall be communicated by written Notice of Termination to the other party hereto. For purposes of this Agreement, a "Notice of Termination" shall mean a notice which shall indicate the specific termination provision in this Agreement relied upon.

(g) Date of Termination. "Date of Termination" shall mean: (i) if the Executive's employment is terminated by his death, the date of his death; (ii) if the Executive's employment is terminated on account of disability under Section 3(b) or by the Company for Cause under Section 3(c), the date on which Notice of Termination is given; (iii) if the Executive's employment is terminated by the Company under Section 3(d), the date on which a Notice of Termination is given or the date otherwise specified by the Company in the Notice of Termination; (iv) if the Executive's employment is terminated by the Executive under Section 3(e) without Good Reason, 30 days after the date on which a Notice of Termination is given, and (v) if the Executive's employment is terminated by the Executive under Section 3(e) with Good Reason, the date on which a Notice of Termination is given after the end of the Cure Period. Notwithstanding the foregoing, (A) in the event that the Executive gives a Notice of Termination to the Company, the Company may unilaterally accelerate the Date of Termination and such acceleration shall not result in a termination by the Company for purposes of this Agreement, and (B) in the event that the Company terminates the Executive's employment without Cause under Section 3(d), the Company may unilaterally accelerate the Date of Termination to any earlier effective date provided that the Company continues to pay the Executive the Base Salary for the 30-day period immediately following the date on which a Notice of Termination is given to the Executive.

4. Compensation Upon Termination.

(a) Termination Generally. If the Executive's employment with the Company is terminated for any reason, the Company shall pay or provide to the Executive (or to his authorized representative or estate) (i) any Base Salary earned through the Date of Termination, unpaid expense reimbursements, and unused vacation that accrued through the Date of Termination, such payments to be made on or before the time required by law but in no event more than 30 days after the Executive's Date of Termination; and (ii) any vested benefits the Executive may have under any employee benefit plan of the Company through the Date of Termination, which vested benefits shall be paid and/or provided in accordance with the terms of such employee benefit plans (collectively, the "Accrued Benefit"). To the extent applicable, the Executive shall be deemed to have resigned from all applicable officer, board member and other positions that the Executive holds with the Company or any of its respective subsidiaries and affiliates upon the termination of the Executive's employment for any reason. The Executive shall execute any documents in reasonable form as may be requested to confirm or effectuate any such resignations.

(b) Termination by the Company Without Cause or by the Executive with Good Reason. During the Term, if the Executive's employment is terminated by the Company without Cause as provided in Section 3(d), or the Executive terminates his employment for Good Reason as provided in Section 3(e), then the Company shall pay the Executive his Accrued Benefit. In addition, subject to the Executive signing a separation agreement in a form and manner satisfactory to the Company containing, among other provisions, a general release of claims in favor of the Company and related persons and entities, confidentiality, return of property, non-disparagement, a reaffirmation of all of the Executive's Continuing Obligations (as defined below), and, in the Company's sole discretion, a one-year post-employment noncompetition provision (the "Separation Agreement and Release" or "Release") and the Separation Agreement and Release becoming fully effective, all within 60 days after the Date of Termination (or such shorter period as the time frame set forth in the Separation Agreement and Release):

(i) the Company shall pay the Executive an amount equal to one times the Executive's Base Salary (the "Severance Amount"); provided that in the event the Executive is entitled to any payments pursuant to the Restrictive Covenants Agreement, the Severance Amount received in any calendar year will be reduced by the amount the Executive is paid in the same such calendar year pursuant to the Restrictive Covenants Agreement (the "Restrictive Covenants Agreement Setoff"); and

(ii) if the Executive was participating in the Company's group health plan immediately prior to the Date of Termination and elects COBRA health continuation, then the Company shall pay to the Executive a monthly cash payment for 12 months or the Executive's COBRA health continuation period, whichever ends earlier, in an amount equal to the monthly employer contribution that the Company would have made to provide health insurance to the Executive if the Executive had remained employed by the Company; and

(iii) the amounts payable under this Section 4(b) shall be paid out in substantially equal installments in accordance with the Company's payroll practice over 12 months commencing within 60 days after the Date of Termination; provided, however, that if the 60-day period begins in one calendar year and ends in a second calendar year, the Severance Amount shall begin to be paid in the second calendar year by the last day of such 60-day period; provided, further, that the initial payment shall include a catch-up payment to cover amounts retroactive to the day immediately following the Date of Termination. Each payment pursuant to this Agreement is intended to constitute a separate payment for purposes of Treasury Regulation Section 1.409A-2(b)(2).

(iv) The receipt of any severance payments or benefits pursuant to Section 4 will be subject to Executive not violating the Restrictive Covenant Agreement referenced in Section 7 of this Agreement and attached hereto as Exhibit A, the terms of which are hereby incorporated by reference. In the event Executive breaches the Restrictive Covenant Agreement, in addition to all other legal and equitable remedies, the Company shall have the right to terminate or suspend all continuing payments and benefits to which Executive may otherwise be entitled pursuant to Section 4 without affecting the Executive's release or Executive's obligations under the Separation Agreement and Release.

5. Change in Control Payment. The provisions of this Section 5 set forth certain terms of an agreement reached between the Executive and the Company regarding the Executive's rights and obligations upon the occurrence of a Change in Control of the Company. These provisions are intended to assure and encourage in advance the Executive's continued attention and dedication to his assigned duties and his objectivity during the pendency and after the occurrence of any such event. These provisions shall apply in lieu of, and expressly supersede, the provisions of Section 4(b) regarding severance pay and benefits upon a termination of employment, if such termination of employment occurs within 12 months after the occurrence of the first event constituting a Change in Control. These provisions shall terminate and be of no further force or effect beginning 12 months after the occurrence of a Change in Control.

(a) Change in Control. During the Term, if within 12 months after a Change in Control, the Executive's employment is terminated by the Company without Cause as provided in Section 3(d) or the Executive terminates his employment for Good Reason as provided in Section 3(e), then, subject to the signing of the Separation Agreement and Release by the Executive and the Separation Agreement and Release becoming irrevocable, all within the time frame set forth in the Release but in no event more than 60 days after the Date of Termination,

(i) the Company shall pay the Executive a lump sum in cash in an amount equal to one times the sum of (A) the Executive's then-current Base Salary (or the Executive's Base Salary in effect immediately prior to the Change in Control, if higher), plus (B) the Executive's Target Incentive Compensation. For purposes of this Agreement, "Target Incentive Compensation" shall mean the Executive's target annual incentive compensation as set forth in Section 2(b) (the "Change in Control Payment"); provided that the Change in Control Payment shall be reduced by the amount of the Restrictive Covenant Agreement Setoff, if applicable; and

(ii) notwithstanding anything to the contrary in any applicable option agreement or stock-based award agreement, all stock options and other stock-based awards granted to the Executive after the date of this Agreement that are subject to time-based vesting shall immediately accelerate and become fully vested and exercisable or nonforfeitable as of the later of (i) the Date of Termination and (ii) the effective date of the Separation Agreement and Release. Except as provided in this subsection, the treatment of stock options and other stock-based awards held by the Executive as of the date of this Agreement shall be governed by the terms of the applicable option agreement or other stock based award agreement; and

(iii) if the Executive was participating in the Company's group health plan immediately prior to the Date of Termination and elects COBRA health continuation, then the Company shall pay to the Executive a monthly cash payment for 12 months or the Executive's COBRA health continuation period, whichever ends earlier, in an amount equal to the monthly employer contribution that the Company would have made to provide health insurance to the Executive if the Executive had remained employed by the Company; and

(iv) The amounts payable under this Section 5(a) shall be paid or commence to be paid within 60 days after the Date of Termination; provided, however, that if the 60-day period begins in one calendar year and ends in a second calendar year, such payments shall be paid or commence to be paid in the second calendar year by the last day of such 60-day period.

(b) Additional Limitation.

(i) Anything in this Agreement to the contrary notwithstanding, in the event that the amount of any compensation, payment or distribution by the Company to or for the benefit of the Executive, whether paid or payable or distributed or distributable pursuant to the terms of this Agreement or otherwise, calculated in a manner consistent with Section 280G of the Internal Revenue Code of 1986, as amended (the "Code") and the applicable regulations thereunder (the "Severance Payments"), would be subject to the excise tax imposed by Section 4999 of the Code, the following provisions shall apply:

(A) If the Severance Payments, reduced by the sum of (1) the Excise Tax and (2) the total of the federal, state, and local income and employment taxes payable by the Executive on the amount of the Severance Payments which are in excess of the Threshold Amount, are greater than or equal to the Threshold Amount, the Executive shall be entitled to the full benefits payable under this Agreement.

(B) If the Threshold Amount is less than (x) the Severance Payments, but greater than (y) the Severance Payments reduced by the sum of (1) the Excise Tax and (2) the total of the federal, state, and local income and employment taxes on the amount of the Severance Payments which are in excess of the Threshold Amount, then the Severance Payments shall be reduced (but not below zero) to the extent necessary so that the sum of all Severance Payments shall not exceed the Threshold Amount. In such event, the Severance Payments shall be reduced in the following order: (1) cash payments not subject to Section 409A of the Code; (2) cash payments subject to Section 409A of the Code; (3) equity-based payments and acceleration; and (4) non-cash forms of benefits. To the extent any payment is to be made over time (e.g., in installments, etc.), then the payments shall be reduced in reverse chronological order.

(ii) For the purposes of this Section 5(b), "Threshold Amount" shall mean three times the Executive's "base amount" within the meaning of Section 280G(b)(3) of the Code

and the regulations promulgated thereunder less one dollar ($1.00); and "Excise Tax" shall mean the excise tax imposed by Section 4999 of the Code, and any interest or penalties incurred by the Executive with respect to such excise tax.

(iii) The determination as to which of the alternative provisions of Section 5(b)(i) shall apply to the Executive shall be made by a nationally recognized accounting firm selected by the Company (the "Accounting Firm"), which shall provide detailed supporting calculations both to the Company and the Executive within 15 business days of the Date of Termination, if applicable, or at such earlier time as is reasonably requested by the Company or the Executive. For purposes of determining which of the alternative provisions of Section 5(b)(i) shall apply, the Executive shall be deemed to pay federal income taxes at the highest marginal rate of federal income taxation applicable to individuals for the calendar year in which the determination is to be made, and state and local income taxes at the highest marginal rates of individual taxation in the state and locality of the Executive's residence on the Date of Termination, net of the maximum reduction in federal income taxes which could be obtained from deduction of such state and local taxes. Any determination by the Accounting Firm shall be binding upon the Company and the Executive.

(c) Definitions. For purposes of this Section 5, the following terms shall have the following meanings:

"Change in Control" shall mean "Sale Event," as such term is defined in the Company's 2013 Stock Option and Incentive Plan.

6. Section 409A.

(a) Anything in this Agreement to the contrary notwithstanding, if at the time of the Executive's separation from service within the meaning of Section 409A of the Code, the Company determines that the Executive is a "specified employee" within the meaning of Section 409A(a)(2)(B)(i) of the Code, then to the extent any payment or benefit that the Executive becomes entitled to under this Agreement on account of the Executive's separation from service would be considered deferred compensation otherwise subject to the 20 percent additional tax imposed pursuant to Section 409A(a) of the Code as a result of the application of Section 409A(a)(2)(B)(i) of the Code, such payment shall not be payable and such benefit shall not be provided until the date that is the earlier of (A) six months and one day after the Executive's separation from service, or (B) the Executive's death. If any such delayed cash payment is otherwise payable on an installment basis, the first payment shall include a catch-up payment covering amounts that would otherwise have been paid during the six-month period but for the application of this provision, and the balance of the installments shall be payable in accordance with their original schedule.

(b) All in-kind benefits provided and expenses eligible for reimbursement under this Agreement shall be provided by the Company or incurred by the Executive during the time periods set forth in this Agreement. All reimbursements shall be paid as soon as administratively practicable, but in no event shall any reimbursement be paid after the last day of the taxable year following the taxable year in which the expense was incurred. The amount of in-kind benefits provided or reimbursable expenses incurred in one taxable year shall not affect the in-kind benefits to be provided or the expenses eligible for reimbursement in any other taxable year (except for any lifetime or other aggregate limitation applicable to medical expenses). Such right to reimbursement or in-kind benefits is not subject to liquidation or exchange for another benefit.

(c) To the extent that any payment or benefit described in this Agreement constitutes "non-qualified deferred compensation" under Section 409A of the Code, and to the extent that such payment or benefit is payable upon the Executive's termination of employment, then such payments or benefits shall be payable only upon the Executive's "separation from service." The determination of whether and when a separation from service has occurred shall be made in accordance with the presumptions set forth in Treasury Regulation Section 1.409A-1(h).

(d) The parties intend that this Agreement will be administered in accordance with Section 409A of the Code. To the extent that any provision of this Agreement is ambiguous as to its compliance with Section 409A of the Code, the provision shall be read in such a manner so that all payments hereunder comply with Section 409A of the Code. Each payment pursuant to this Agreement or the Restrictive Covenant Agreement is intended to constitute a separate payment for purposes of Treasury Regulation Section 1.409A-2(b)(2). The parties agree that this Agreement may be amended, as reasonably requested by either party, and as may be necessary to fully comply with Section 409A of the Code and all related rules and regulations in order to preserve the payments and benefits provided hereunder without additional cost to either party.

(e) The Company makes no representation or warranty and shall have no liability to the Executive or any other person if any provisions of this Agreement are determined to constitute deferred compensation subject to Section 409A of the Code but do not satisfy an exemption from, or the conditions of, such Section.

7. Continuing Obligations.

(a) Restrictive Covenants Agreement. As a condition of employment, the Executive is required to enter into the Employee Confidentiality, Assignment, Nonsolicitation and Noncompetition Agreement, attached hereto as Exhibit A (the "Restrictive Covenants Agreement"). The Executive acknowledges and agrees that the Executive received the Restrictive Covenants Agreement with this Agreement and at least ten (10) business days before the commencement of the Executive's employment with the Company. The Executive's confidentiality and restrictive covenant obligations to bluebird bio (the "Prior Obligations") will be or have been assigned to the Company in the Transaction, to which assignment the Executive hereby consents, and such Prior Obligations remain in full effect. For purposes of this Agreement, the obligations in this Section, those contained in the Restrictive Covenants Agreement and any other agreement relating to confidentiality, assignment of inventions, or other restrictive covenants, including without limitation the Prior Obligations, shall collectively be referred to as the "Continuing Obligations."

8. Consent to Jurisdiction. The parties hereby consent to the jurisdiction of the Superior Court of the Commonwealth of Massachusetts and the United States District Court for the District of Massachusetts. Accordingly, with respect to any such court action, the Executive (a) submits to the personal jurisdiction of such courts; (b) consents to service of process; and (c) waives any other requirement (whether imposed by statute, rule of court, or otherwise) with respect to personal jurisdiction or service of process.

9. Integration. This Agreement constitutes the entire agreement between the parties with respect to the subject matter hereof and supersedes all prior agreements between the parties concerning such subject matter; including the Prior Agreement, provided that the Prior Obligations remain in full force and effect.

10. Withholding. All payments made by the Company to the Executive under this Agreement shall be net of any tax or other amounts required to be withheld by the Company under applicable law.

11. Assignment; Successors and Assigns. Neither the Executive nor the Company may make any assignment of this Agreement or any interest in it, by operation of law or otherwise, without the prior written consent of the other; *provided*, *however*, that the Company may assign its rights and obligations under this Agreement (including the Restrictive Covenants Agreement and the Prior Obligations) without the Executive's consent to any affiliate or to any person or entity with whom the Company shall hereafter effect a reorganization or consolidation, into which the Company merges or to whom it transfers all or substantially all of its properties or assets; *provided*, *further* that if the Executive remains employed or becomes employed by the Company, the purchaser or any of their affiliates in connection with any such transaction, then the Executive shall not be entitled to any payments, benefits or vesting pursuant to Section 5 or pursuant to Section 6 of this Agreement solely as a result of such transaction. This Agreement shall inure to the benefit of and be binding upon the Executive and the Company, and each of the Executive's and the Company's respective successors, executors, administrators, heirs and permitted assigns.

12. Enforceability. If any portion or provision of this Agreement (including, without limitation, any portion or provision of any section of the Restrictive Covenant Agreement) shall to any extent be declared illegal or unenforceable by a court of competent jurisdiction, then the remainder of this Agreement, or the application of such portion or provision in circumstances other than those as to which it is so declared illegal or unenforceable, shall not be affected thereby, and each portion and provision of this Agreement shall be valid and enforceable to the fullest extent permitted by law.

13. Survival. The provisions of this Agreement shall survive the termination of this Agreement and/or the termination of the Executive's employment to the extent necessary to effectuate the terms contained herein.

14. Waiver. No waiver of any provision hereof shall be effective unless made in writing and signed by the waiving party. The failure of any party to require the performance of any term or obligation of this Agreement, or the waiver by any party of any breach of this Agreement, shall not prevent any subsequent enforcement of such term or obligation or be deemed a waiver of any subsequent breach.

15. Notices. Any notices, requests, demands and other communications provided for by this Agreement shall be sufficient if in writing and delivered in person or sent by a nationally recognized overnight courier service or by registered or certified mail, postage prepaid, return receipt requested, to the Executive at the last address the Executive has filed in writing with the Company or, in the case of the Company, at its main offices, attention of the Board.

16. Amendment. This Agreement may be amended or modified only by a written instrument signed by the Executive and by a duly authorized representative of the Company.

17. Effect on Other Plans and Agreements. Except for the Restrictive Covenants Agreement, in the event that the Executive is party to an agreement with the Company providing for payments or benefits under such plan or agreement and under this Agreement, the terms of this Agreement shall govern and the Executive may receive payment under this Agreement only and not both. Further, Section 5 and Section 6 of this Agreement are mutually exclusive and in no event shall the Executive be entitled to payments or benefits pursuant to both Section 5 and Section 6 of this Agreement.

18. Governing Law. This is a Massachusetts contract and shall be construed under and be governed in all respects by the laws of the Commonwealth of Massachusetts, without giving effect to the conflict of laws principles of such Commonwealth. With respect to any disputes concerning federal law, such disputes shall be determined in accordance with the law as it would be interpreted and applied by the United States Court of Appeals for the First Circuit.

19. Counterparts. This Agreement may be executed in any number of counterparts, each of which when so executed and delivered shall be taken to be an original; but such counterparts shall together constitute one and the same document.

20. Gender Neutral. Wherever used herein, a pronoun in the masculine gender shall be considered as including the feminine gender unless the context clearly indicates otherwise.

IN WITNESS WHEREOF, the parties have executed this Agreement effective on the Effective Date.

2SEVENTY BIO, INC.

By: /s/ Nick Leschly
Its: President

/s/ William Baird
Mr. William Baird

EMPLOYMENT AGREEMENT

This Employment Agreement ("Agreement") is between 2seventy bio, Inc., a Delaware corporation (the "Company"), and Dr. Philip Gregory (the "Executive") effective as of the closing of that certain transaction in which bluebird bio, Inc. ("bluebird") spun-off its oncology business into the Company (the "Transaction," and the closing date the "Effective Date.") If the Transaction does not close, this Agreement shall be null and void *ab initio*. Except for the Prior Obligations (as defined below), this Agreement supersedes in all respects all prior and contemporaneous agreements, representations and communications between the Executive and the Company, and between the Executive and bluebird, regarding the employment of the Executive with either the Company or bluebird, including without limitation the Employment Agreement between the Executive and bluebird dated May 30, 2015 (including any amendments, the "Prior Employment Agreement"). In entering into this Agreement, in consideration for the opportunity to receive the compensation and benefits provided herein, the Executive hereby waives any right or potential right the Executive may have to receive: (i) any severance or change in control compensation or benefits under the Prior Employment Agreement, under any bluebird severance plan or under any other agreement or arrangement with bluebird, and (ii) any compensation or benefits related to the Executive's employment termination or other service relationship termination from bluebird, whether under the Prior Employment Agreement or otherwise.

WHEREAS, the Company desires to employ the Executive and the Executive desires to be employed by the Company on the terms and conditions contained herein.

NOW, THEREFORE, in consideration of the mutual covenants and agreements herein contained and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties agree as follows:

1. Employment.

(a) Term. The term of this Agreement shall commence on the Effective Date and shall continue until terminated in accordance with the provisions of Section 3 (the "Term").

(b) Position and Duties. During the Term, the Executive shall serve as the Chief Scientific Officer of the Company, and shall have supervision and control over and responsibility for the day-to-day business and affairs of the Company and shall have such other powers and duties as may from time to time be prescribed by the Chairman of the Board of Directors of the Company (the "Board"), the Chief Executive Officer of the Company (the "CEO") or other authorized executive, provided that such duties are consistent with the Executive's position or other positions that he may hold from time to time. The Executive shall report to the CEO. The Executive shall devote his full working time and efforts to the business and affairs of the Company. Notwithstanding the foregoing, the Executive may serve on other boards of directors, with the approval of the Board, or engage in religious, charitable or other community activities as long as such services and activities are disclosed to the Board and do not materially interfere with the Executive's performance of his duties to the Company as provided in this Agreement.

2. Compensation and Related Matters.

(a) Base Salary. During the Term, the Executive's initial annual base salary shall be $496,300. The Executive's base salary shall be redetermined annually by the Board or the Compensation Committee. The annual base salary in effect at any given time is referred to herein as "Base Salary." The Base Salary shall be payable in a manner that is consistent with the Company's usual payroll practices for senior executives.

(b) Incentive Compensation. During the Term, the Executive shall be eligible to receive cash incentive compensation as determined by the Board or the Compensation Committee from time to time. The Executive's target annual incentive compensation shall be 45 percent (45%) of his Base Salary. To earn any incentive compensation, the Executive must be employed by the Company on the day such incentive compensation is paid.

(c) Equity. Any equity awards held by the Executive shall be governed by the terms and conditions of the Company's equity plan, as amended from time to time, and the applicable award agreement(s) governing the terms of such equity awards held by the Executive.

(d) Expenses. The Executive shall be entitled to receive prompt reimbursement for all reasonable expenses incurred by him during the Term in performing services hereunder, in accordance with the policies and procedures then in effect and established by the Company for its senior executive officers.

(e) Other Benefits. During the Term, the Executive shall be eligible to participate in or receive benefits under the Company's employee benefit plans in effect from time to time, subject to the terms of such plans.

(f) Vacations. During the Term, the Executive shall be entitled to paid vacation in accordance with the Company's applicable policy.

3. Termination. During the Term, the Executive's employment hereunder may be terminated without any breach of this Agreement under the following circumstances:

(a) Death. The Executive's employment hereunder shall terminate upon his death.

(b) Disability. The Company may terminate the Executive's employment if he is disabled and unable to perform the essential functions of the Executive's then existing position or positions under this Agreement with or without reasonable accommodation for a period of 180 days (which need not be consecutive) in any 12-month period. If any question shall arise as to whether during any period the Executive is disabled so as to be unable to perform the essential functions of the Executive's then existing position or positions with or without reasonable accommodation, the Executive may, and at the request of the Company shall, submit to the Company a certification in reasonable detail by a physician selected by the Company to whom the Executive or the Executive's guardian has no reasonable objection as to whether the Executive is so disabled or how long such disability is expected to continue, and such certification shall for the purposes of this Agreement be conclusive of the issue. The Executive shall cooperate with any reasonable request of the physician in connection with such certification. If such question shall arise and the Executive shall fail to submit such certification, the Company's determination of such issue shall be binding on the Executive. Nothing in this Section 3(b) shall be construed to waive the Executive's rights, if any, under existing law including, without limitation, the Family and Medical Leave Act of 1993, 29 U.S.C. §2601 *et seq.* and the Americans with Disabilities Act, 42 U.S.C. §12101 *et seq.*

(c) Termination by Company for Cause. The Company may terminate the Executive's employment hereunder for Cause by a vote of the Board at a meeting of the Board called and held for such purpose. For purposes of this Agreement, "Cause" shall mean: (i) the Executive's dishonest statements or acts with respect to the Company, any affiliate of the Company or any of the Company's current or prospective customers, suppliers, vendors or other third parties with which such entity does business; (ii) the Executive's commission of a felony or any misdemeanor involving moral turpitude, deceit, dishonesty or fraud; (iii) the Executive's failure to perform his assigned duties to the reasonable

satisfaction of the Company, which failure, if curable, continues, in the reasonable judgment of the Company, after written notice given to the Executive by the Company; (iv) the Executive's gross negligence, willful misconduct or insubordination with respect to the Company or any affiliate of the Company; or (v) the Executive's violation of any provision of any agreement(s) between the Executive and the Company relating to noncompetition, nonsolicitation, nondisclosure and/or assignment of inventions.

(d) Termination Without Cause. The Company may terminate the Executive's employment hereunder at any time without Cause. Any termination by the Company of the Executive's employment under this Agreement which does not constitute a termination for Cause under Section 3(c) and does not result from the death or disability of the Executive under Section 3(a) or (b) shall be deemed a termination without Cause.

(e) Termination by the Executive. The Executive may terminate his employment hereunder at any time for any reason, including but not limited to Good Reason. For purposes of this Agreement, "Good Reason" shall mean that the Executive has complied with the "Good Reason Process" (hereinafter defined) following the occurrence of any of the following events without the Executive's express written consent: (i) a material diminution in the Executive's responsibilities, authority and function; (ii) a material reduction in the Executive's Base Salary except pursuant to a salary reduction program affecting substantially all of the employees of the Company, provided, that it does not adversely affect the Executive to a greater extent than other similarly situated employees and, provided further, that any reduction in the Executive's Base Salary of more than ten percent (10%) shall constitute Good Reason; (iii) a material change of more than 30 miles in the geographic location at which the Executive must provide services to the Company (not including any remote working arrangement, or the cessation of any remote working arrangement, related to the COVID-19 pandemic, and not including travel on Company business to an extent substantially consistent with the Executive's usual business travel obligations); or (iv) the material breach by the Company of the Company's equity incentive plan or the stock option agreement governing the stock option granted to the Executive, if any, or any other material agreement between the Executive and the Company, if any, concerning the terms and conditions of the Executive's employment, benefits or compensation. "Good Reason Process" shall mean that (i) the Executive reasonably determines in good faith that a "Good Reason" condition has occurred; (ii) the Executive notifies the Company in writing of the first occurrence of the Good Reason condition within 60 days of the first occurrence of such condition; (iii) the Executive cooperates in good faith with the Company's efforts, for a period not less than 30 days following such notice (the "Cure Period") to remedy the condition; (iv) notwithstanding such efforts, the Good Reason condition continues to exist; and (v) the Executive terminates his employment within 60 days after the end of the Cure Period. If the Company cures the Good Reason condition during the Cure Period, Good Reason shall be deemed not to have occurred.

(f) Notice of Termination. Except for termination as specified in Section 3(a), any termination of the Executive's employment by the Company or any such termination by the Executive shall be communicated by written Notice of Termination to the other party hereto. For purposes of this Agreement, a "Notice of Termination" shall mean a notice which shall indicate the specific termination provision in this Agreement relied upon.

(g) Date of Termination. "Date of Termination" shall mean: (i) if the Executive's employment is terminated by his death, the date of his death; (ii) if the Executive's employment is terminated on account of disability under Section 3(b) or by the Company for Cause under Section 3(c), the date on which Notice of Termination is given; (iii) if the Executive's employment is terminated by the Company under Section 3(d), the date on which a Notice of Termination is given or the date otherwise specified by the Company in the Notice of Termination; (iv) if the Executive's employment is terminated

by the Executive under Section 3(e) without Good Reason, 30 days after the date on which a Notice of Termination is given, and (v) if the Executive's employment is terminated by the Executive under Section 3(e) with Good Reason, the date on which a Notice of Termination is given after the end of the Cure Period. Notwithstanding the foregoing, (A) in the event that the Executive gives a Notice of Termination to the Company, the Company may unilaterally accelerate the Date of Termination and such acceleration shall not result in a termination by the Company for purposes of this Agreement, and (B) in the event that the Company terminates the Executive's employment without Cause under Section 3(d), the Company may unilaterally accelerate the Date of Termination to any earlier effective date provided that the Company continues to pay the Executive the Base Salary for the 30-day period immediately following the date on which a Notice of Termination is given to the Executive.

4. Compensation Upon Termination.

(a) Termination Generally. If the Executive's employment with the Company is terminated for any reason, the Company shall pay or provide to the Executive (or to his authorized representative or estate) (i) any Base Salary earned through the Date of Termination, unpaid expense reimbursements (subject to, and in accordance with, Section 2(c) of this Agreement) and unused vacation that accrued through the Date of Termination on or before the time required by law but in no event more than 30 days after the Executive's Date of Termination; and (ii) any vested benefits the Executive may have under any employee benefit plan of the Company through the Date of Termination, which vested benefits shall be paid and/or provided in accordance with the terms of such employee benefit plans (collectively, the "Accrued Benefit"). To the extent applicable, the Executive shall be deemed to have resigned from all applicable officer, board member and other positions that the Executive holds with the Company or any of its respective subsidiaries and affiliates upon the termination of the Executive's employment for any reason. The Executive shall execute any documents in reasonable form as may be requested to confirm or effectuate any such resignations.

(b) Termination by the Company Without Cause or by the Executive with Good Reason. During the Term, if the Executive's employment is terminated by the Company without Cause as provided in Section 3(d), or the Executive terminates his employment for Good Reason as provided in Section 3(e), then the Company shall pay the Executive his Accrued Benefit. In addition, subject to the Executive signing a separation agreement in a form and manner satisfactory to the Company containing, among other provisions, a general release of claims in favor of the Company and related persons and entities, confidentiality, return of property, non-disparagement, a reaffirmation of all of the Executive's Continuing Obligations (as defined below), and, in the Company's sole discretion, a one-year post-employment noncompetition provision, (the "Separation Agreement and Release") and the Separation Agreement and Release becoming fully effective, all within 60 days after the Date of Termination (or such shorter period as the time frame set forth in the Separation Agreement and Release):

(i) the Company shall pay the Executive an amount equal to one times the Executive's Base Salary (the "Severance Amount"); provided that in the event the Executive is entitled to any payments pursuant to the Restrictive Covenants Agreement, the Severance Amount received in any calendar year will be reduced by the amount the Executive is paid in the same such calendar year pursuant to the Restrictive Covenants Agreement (the "Restrictive Covenants Agreement Setoff"); and

(ii) if the Executive was participating in the Company's group health plan immediately prior to the Date of Termination and elects COBRA health continuation, then the Company shall pay to the Executive a monthly cash payment for 12 months or the Executive's COBRA health continuation period, whichever ends earlier, in an amount equal to the monthly

employer contribution that the Company would have made to provide health insurance to the Executive if the Executive had remained employed by the Company; and

(iii) the amounts payable under this Section 4(b) shall be paid out in substantially equal installments in accordance with the Company's payroll practice over 12 months commencing within 60 days after the Date of Termination; provided, however, that if the 60-day period begins in one calendar year and ends in a second calendar year, the Severance Amount shall begin to be paid in the second calendar year by the last day of such 60-day period; provided, further, that the initial payment shall include a catch-up payment to cover amounts retroactive to the day immediately following the Date of Termination. Each payment pursuant to this Agreement is intended to constitute a separate payment for purposes of Treasury Regulation Section 1.409A-2(b)(2).

(iv) The receipt of any severance payments or benefits pursuant to Section 4 will be subject to Executive not violating the Restrictive Covenant Agreement referenced in Section 7 of this Agreement and attached hereto as Exhibit A, the terms of which are hereby incorporated by reference. In the event Executive breaches the Restrictive Covenant Agreement, in addition to all other legal and equitable remedies, the Company shall have the right to terminate or suspend all continuing payments and benefits to which Executive may otherwise be entitled pursuant to Section 4 without affecting the Executive's release or Executive's obligations under the Separation Agreement and Release.

5. Change in Control Payment. The provisions of this Section 5 set forth certain terms of an agreement reached between the Executive and the Company regarding the Executive's rights and obligations upon the occurrence of a Change in Control of the Company. These provisions are intended to assure and encourage in advance the Executive's continued attention and dedication to his assigned duties and his objectivity during the pendency and after the occurrence of any such event. These provisions shall apply in lieu of, and expressly supersede, the provisions of Section 4(b) regarding severance pay and benefits upon a termination of employment, if such termination of employment occurs within 12 months after the occurrence of the first event constituting a Change in Control. These provisions shall terminate and be of no further force or effect beginning 12 months after the occurrence of a Change in Control.

(a) Change in Control. During the Term, if within 12 months after a Change in Control, the Executive's employment is terminated by the Company without Cause as provided in Section 3(d) or the Executive terminates his employment for Good Reason as provided in Section 3(e), then, subject to the signing of the Separation Agreement and Release by the Executive and the Separation Agreement and Release becoming irrevocable, all within the time frame set forth in the Release but in no event more than 60 days after the Date of Termination.

(i) the Company shall pay the Executive a lump sum in cash in an amount equal to one times the sum of (A) the Executive's then-current Base Salary (or the Executive's Base Salary in effect immediately prior to the Change in Control, if higher), plus (B) the Executive's Target Incentive Compensation. For purposes of this Agreement, "Target Incentive Compensation" shall mean the Executive's target annual incentive compensation as set forth in Section 2(b) (the "Change in Control Payment"); provided that the Change in Control Payment shall be reduced by the amount of the Restrictive Covenant Agreement Setoff, if applicable; and

(ii) notwithstanding anything to the contrary in any applicable option agreement or stock-based award agreement, all stock options and other stock-based awards granted to the Executive after the date of this Agreement that are subject to time-based vesting shall immediately accelerate and become fully vested and exercisable or nonforfeitable as of the

later of (i) the Date of Termination and (ii) the effective date of the Separation Agreement and Release. Except as provided in this subsection, the treatment of stock options and other stock-based awards held by the Executive as of the date of this Agreement shall be governed by the terms of the applicable option agreement or other stock based award agreement; and

(iii) if the Executive was participating in the Company's group health plan immediately prior to the Date of Termination and elects COBRA health continuation, then the Company shall pay to the Executive a monthly cash payment for 12 months or the Executive's COBRA health continuation period, whichever ends earlier, in an amount equal to the monthly employer contribution that the Company would have made to provide health insurance to the Executive if the Executive had remained employed by the Company; and

(iv) The amounts payable under this Section 5(a) shall be paid or commence to be paid within 60 days after the Date of Termination; provided, however, that if the 60-day period begins in one calendar year and ends in a second calendar year, such payments shall be paid or commence to be paid in the second calendar year by the last day of such 60-day period.

(b) Additional Limitation.

(i) Anything in this Agreement to the contrary notwithstanding, in the event that the amount of any compensation, payment or distribution by the Company to or for the benefit of the Executive, whether paid or payable or distributed or distributable pursuant to the terms of this Agreement or otherwise, calculated in a manner consistent with Section 280G of the Internal Revenue Code of 1986, as amended (the "Code") and the applicable regulations thereunder (the "Severance Payments"), would be subject to the excise tax imposed by Section 4999 of the Code, the following provisions shall apply:

(A) If the Severance Payments, reduced by the sum of (1) the Excise Tax and (2) the total of the federal, state, and local income and employment taxes payable by the Executive on the amount of the Severance Payments which are in excess of the Threshold Amount, are greater than or equal to the Threshold Amount, the Executive shall be entitled to the full benefits payable under this Agreement.

(B) If the Threshold Amount is less than (x) the Severance Payments, but greater than (y) the Severance Payments reduced by the sum of (1) the Excise Tax and (2) the total of the federal, state, and local income and employment taxes on the amount of the Severance Payments which are in excess of the Threshold Amount, then the Severance Payments shall be reduced (but not below zero) to the extent necessary so that the sum of all Severance Payments shall not exceed the Threshold Amount. In such event, the Severance Payments shall be reduced in the following order: (1) cash payments not subject to Section 409A of the Code; (2) cash payments subject to Section 409A of the Code; (3) equity-based payments and acceleration; and (4) non-cash forms of benefits. To the extent any payment is to be made over time (e.g., in installments, etc.), then the payments shall be reduced in reverse chronological order.

(ii) For the purposes of this Section 5(b), "Threshold Amount" shall mean three times the Executive's "base amount" within the meaning of Section 280G(b)(3) of the Code and the regulations promulgated thereunder less one dollar ($1.00); and "Excise Tax" shall mean the excise tax imposed by Section 4999 of the Code, and any interest or penalties incurred by the Executive with respect to such excise tax.

(iii) The determination as to which of the alternative provisions of Section 5(b)(i) shall apply to the Executive shall be made by a nationally recognized accounting firm selected by the Company (the "Accounting Firm"), which shall provide detailed supporting calculations both to the Company and the Executive within 15 business days of the Date of Termination, if applicable, or at such earlier time as is reasonably requested by the Company or the Executive. For purposes of determining which of the alternative provisions of Section 5(b)(i) shall apply, the Executive shall be deemed to pay federal income taxes at the highest marginal rate of federal income taxation applicable to individuals for the calendar year in which the determination is to be made, and state and local income taxes at the highest marginal rates of individual taxation in the state and locality of the Executive's residence on the Date of Termination, net of the maximum reduction in federal income taxes which could be obtained from deduction of such state and local taxes. Any determination by the Accounting Firm shall be binding upon the Company and the Executive.

(c) Definitions. For purposes of this Section 5, the following terms shall have the following meanings:

"Change in Control" shall mean "Sale Event," as such term is defined in the Company's 2021 Stock Option and Incentive Plan.

6. Section 409A.

(a) Anything in this Agreement to the contrary notwithstanding, if at the time of the Executive's separation from service within the meaning of Section 409A of the Code, the Company determines that the Executive is a "specified employee" within the meaning of Section 409A(a)(2)(B)(i) of the Code, then to the extent any payment or benefit that the Executive becomes entitled to under this Agreement on account of the Executive's separation from service would be considered deferred compensation otherwise subject to the 20 percent additional tax imposed pursuant to Section 409A(a) of the Code as a result of the application of Section 409A(a)(2)(B)(i) of the Code, such payment shall not be payable and such benefit shall not be provided until the date that is the earlier of (A) six months and one day after the Executive's separation from service, or (B) the Executive's death. If any such delayed cash payment is otherwise payable on an installment basis, the first payment shall include a catch-up payment covering amounts that would otherwise have been paid during the six-month period but for the application of this provision, and the balance of the installments shall be payable in accordance with their original schedule.

(b) All in-kind benefits provided and expenses eligible for reimbursement under this Agreement shall be provided by the Company or incurred by the Executive during the time periods set forth in this Agreement. All reimbursements shall be paid as soon as administratively practicable, but in no event shall any reimbursement be paid after the last day of the taxable year following the taxable year in which the expense was incurred. The amount of in-kind benefits provided or reimbursable expenses incurred in one taxable year shall not affect the in-kind benefits to be provided or the expenses eligible for reimbursement in any other taxable year (except for any lifetime or other aggregate limitation applicable to medical expenses). Such right to reimbursement or in-kind benefits is not subject to liquidation or exchange for another benefit.

(c) To the extent that any payment or benefit described in this Agreement constitutes "non-qualified deferred compensation" under Section 409A of the Code, and to the extent that such payment or benefit is payable upon the Executive's termination of employment, then such payments or benefits shall be payable only upon the Executive's "separation from service." The determination of

whether and when a separation from service has occurred shall be made in accordance with the presumptions set forth in Treasury Regulation Section 1.409A-l(h).

(d) The parties intend that this Agreement will be administered in accordance with Section 409A of the Code. To the extent that any provision of this Agreement is ambiguous as to its compliance with Section 409A of the Code, the provision shall be read in such a manner so that all payments hereunder comply with Section 409A of the Code. Each payment pursuant to this Agreement or the Restrictive Covenant Agreement is intended to constitute a separate payment for purposes of Treasury Regulation Section 1.409A-2(b)(2). The parties agree that this Agreement may be amended, as reasonably requested by either party, and as may be necessary to fully comply with Section 409A of the Code and all related rules and regulations in order to preserve the payments and benefits provided hereunder without additional cost to either party.

(e) The Company makes no representation or warranty and shall have no liability to the Executive or any other person if any provisions of this Agreement are determined to constitute deferred compensation subject to Section 409A of the Code but do not satisfy an exemption from, or the conditions of, such Section.

7. Continuing Obligations.; Restrictive Covenants Agreement. As a condition of employment, the Executive is required to enter into the Employee Confidentiality, Assignment, Nonsolicitation and Noncompetition Agreement, attached hereto as Exhibit A (the "Restrictive Covenants Agreement"). The Executive acknowledges and agrees that the Executive received the Restrictive Covenants Agreement with this Agreement and at least ten (10) business days before the commencement of the Executive's employment with the Company. The Executive's confidentiality and restrictive covenant obligations to bluebird bio (the "Prior Obligations") will be or have been assigned to the Company in the Transaction, to which assignment the Executive hereby consents, and such Prior Obligations remain in full effect. For purposes of this Agreement, the obligations in this Section, those contained in the Restrictive Covenants Agreement and any other agreement relating to confidentiality, assignment of inventions, or other restrictive covenants, including without limitation the Prior Obligations, shall collectively be referred to as the "Continuing Obligations."

8. Consent to Jurisdiction. The parties hereby consent to the jurisdiction of the Superior Court of the Commonwealth of Massachusetts and the United States District Court for the District of Massachusetts. Accordingly, with respect to any such court action, the Executive (a) submits to the personal jurisdiction of such courts; (b) consents to service of process; and (c) waives any other requirement (whether imposed by statute, rule of court, or otherwise) with respect to personal jurisdiction or service of process.

9. Integration. This Agreement constitutes the entire agreement between the parties with respect to the subject matter hereof and supersedes all prior agreements between the parties concerning such subject matter; including the Prior Agreement, provided that the Prior Obligations remain in full force and effect.

10. Withholding. All payments made by the Company to the Executive under this Agreement shall be net of any tax or other amounts required to be withheld by the Company under applicable law.

11. Assignment; Successors and Assigns. Neither the Executive nor the Company may make any assignment of this Agreement or any interest in it, by operation of law or otherwise, without the prior written consent of the other; *provided*, *however*, that the Company may assign its rights and obligations under this Agreement (including the Restrictive Covenants Agreement and the Prior Obligations) without the Executive's consent to any affiliate or to any person or entity with whom the Company shall hereafter

effect a reorganization or consolidation, into which the Company merges or to whom it transfers all or substantially all of its properties or assets; *provided, further* that if the Executive remains employed or becomes employed by the Company, the purchaser or any of their affiliates in connection with any such transaction, then the Executive shall not be entitled to any payments, benefits or vesting pursuant to Section 5 or pursuant to Section 6 of this Agreement solely as a result of such transaction. This Agreement shall inure to the benefit of and be binding upon the Executive and the Company, and each of the Executive's and the Company's respective successors, executors, administrators, heirs and permitted assigns.

12. Enforceability. If any portion or provision of this Agreement (including, without limitation, any portion or provision of any section of the Restrictive Covenant Agreement) shall to any extent be declared illegal or unenforceable by a court of competent jurisdiction, then the remainder of this Agreement, or the application of such portion or provision in circumstances other than those as to which it is so declared illegal or unenforceable, shall not be affected thereby, and each portion and provision of this Agreement shall be valid and enforceable to the fullest extent permitted by law.

13. Survival. The provisions of this Agreement shall survive the termination of this Agreement and/or the termination of the Executive's employment to the extent necessary to effectuate the terms contained herein.

14. Waiver. No waiver of any provision hereof shall be effective unless made in writing and signed by the waiving party. The failure of any party to require the performance of any term or obligation of this Agreement, or the waiver by any party of any breach of this Agreement, shall not prevent any subsequent enforcement of such term or obligation or be deemed a waiver of any subsequent breach.

15. Notices. Any notices, requests, demands and other communications provided for by this Agreement shall be sufficient if in writing and delivered in person or sent by a nationally recognized overnight courier service or by registered or certified mail, postage prepaid, return receipt requested, to the Executive at the last address the Executive has filed in writing with the Company or, in the case of the Company, at its main offices, attention of the Board.

16. Amendment. This Agreement may be amended or modified only by a written instrument signed by the Executive and by a duly authorized representative of the Company.

17. Effect on Other Plans and Agreements. Except for the Restrictive Covenants Agreement, in the event that the Executive is party to an agreement with the Company providing for payments or benefits under such plan or agreement and under this Agreement, the terms of this Agreement shall govern and the Executive may receive payment under this Agreement only and not both. Further, Section 5 and Section 6 of this Agreement are mutually exclusive and in no event shall the Executive be entitled to payments or benefits pursuant to both Section 5 and Section 6 of this Agreement.

18. Governing Law. This is a Massachusetts contract and shall be construed under and be governed in all respects by the laws of the Commonwealth of Massachusetts, without giving effect to the conflict of laws principles of such Commonwealth. With respect to any disputes concerning federal law, such disputes shall be determined in accordance with the law as it would be interpreted and applied by the United States Court of Appeals for the First Circuit.

19. Counterparts. This Agreement may be executed in any number of counterparts, each of which when so executed and delivered shall be taken to be an original; but such counterparts shall together constitute one and the same document.

20. Gender Neutral. Wherever used herein, a pronoun in the masculine gender shall be considered as including the feminine gender unless the context clearly indicates otherwise.

IN WITNESS WHEREOF, the parties have executed this Agreement effective on the Effective Date.

2SEVENTY BIO, INC.

By: /s/ Nick Leschly
Its: President

/s/ Philip Gregory

Dr. Philip Gregory

Dear bluebird bio, Inc. Stockholder:

In January 2021, we announced a transformative milestone for bluebird bio, Inc.—our intent to separate our oncology portfolio and programs from our severe genetic disease portfolio and programs, thereby creating two independent, publicly traded companies. The strategic objectives of the separation are to unlock value, enhance operational performance and strategic flexibility and tailor the capital structures to best serve these distinct businesses.

We believe the best way to realize the full potential of this separation is for bluebird bio, Inc. and 2seventy bio, Inc. to operate independently, with distinct management teams and boards of directors dedicated to their unique business strategies. Through this separation, we have the potential to create two focused, durable businesses that are well-positioned with the resources, talent and foundation to be industry leaders in their respective fields.

Going forward, bluebird bio, Inc. intends to focus primarily on its programs in severe genetic disease, including betibeglogene autotemcel (beti-cel; formerly LentiGlobin gene therapy for β-thalassemia), LentiGlobin gene therapy for sickle cell disease, and elivaldogene autotemcel (eli-cel; formerly Lenti-D gene therapy for cerebral adrenoleukodystrophy). 2seventy bio, Inc. plans to focus primarily on the discovery and development of novel engineered cell therapies for cancer, including chimeric antigen receptor (CAR) and T cell receptor (TCR) T cell therapies. 2seventy bio, Inc. expects to commercialize idecabtagene vicleucel (ide-cel; being commercialized as Abecma) in the United States and develop bb21217 through its collaboration arrangement with Bristol-Myers Squibb.

Upon completion of the separation, 2seventy bio, Inc. will be spun out of bluebird bio, Inc. and established as an independent, publicly traded company. The separation is anticipated to be generally tax-free to bluebird bio, Inc. stockholders. Under the terms of the distribution, each bluebird bio, Inc. stockholder will receive one share of 2seventy bio, Inc. common stock for every three shares of bluebird bio, Inc. common stock held of record on October 19, 2021, the record date for the distribution. You do not need to take any action to receive the common stock of 2seventy bio, Inc. to which you are entitled as a bluebird bio, Inc. stockholder as of the record date.

Please read the attached information statement, which is being shared with all bluebird bio, Inc. stockholders as of the record date for the distribution. It describes the separation in detail and contains important information about bluebird bio, Inc. and 2seventy bio, Inc.

We thank you for your continued support of bluebird bio, Inc.

Sincerely,

Daniel S. Lynch
Chairman of the Board
bluebird bio, Inc.

Dear Future 2seventy bio, Inc. Stockholder:

On behalf of the entire future 2seventy bio, Inc. team, I am pleased to welcome you as a future stockholder of our new company.

2seventy bio, Inc. will be a cell and gene therapy company focused on the research, development, and commercialization of transformative treatments for cancer. Its programs will be based on chimeric antigen receptor (CAR) technology and T cell receptor technology. At launch, 2seventy bio, Inc.'s programs will include idecabtagene vicleucel; ide-cel, or Abecma, and bb21217, CAR-T cell product candidates for the treatment of multiple myeloma, which are partnered under a collaboration arrangement with Bristol-Myers Squibb. We believe our team's expertise in T cell engineering technology and lentiviral vector gene delivery approaches, experience in research, development, and manufacturing of cell therapies and a suite of technologies will enable us to develop a pipeline of highly innovative, targeted cellular therapies for patients with cancer.

Our common stock has been approved for listing on the Nasdaq Global Select Market under the symbol "TSVT" in connection with the distribution of our company's common stock by bluebird bio, Inc.

I invite you to learn more about 2seventy bio, Inc. by reviewing the enclosed information statement. We look forward to our future as an independent company, and to your support as a 2seventy bio, Inc. stockholder as we begin this new and exciting chapter.

Sincerely,

Nick Leschly
Chief Executive Officer
2seventy bio, Inc.

INFORMATION STATEMENT

2seventy bio, Inc.

This information statement is being furnished to you as a holder of common stock of bluebird bio, Inc. ("bluebird bio") in connection with the distribution of shares of common stock of 2seventy bio, Inc., or 2seventy bio. 2seventy bio, which is currently a wholly owned subsidiary of bluebird bio, will hold, directly or indirectly, assets and liabilities related to bluebird bio's oncology portfolio and programs. To implement the distribution, bluebird bio will distribute all of the outstanding shares of 2seventy bio common stock on a pro rata basis to holders of bluebird bio common stock in a manner that is intended to be generally tax-free to bluebird bio stockholders for U.S. federal income tax purposes.

You will receive one share of 2seventy bio common stock for every three shares of bluebird bio common stock held of record by you as of the close of business on October 19, 2021, the record date for the distribution. Holders of bluebird bio common stock will receive cash in lieu of any fractional shares of 2seventy bio common stock that those holders would have received after application of the above ratio. As discussed under "The Separation and Distribution—Trading Between the Record Date and Distribution Date," if you sell your shares of bluebird bio common stock in the "regular way" market after the record date and before the distribution, you also will be selling your right to receive shares of 2seventy bio common stock in connection with the distribution. 2seventy bio expects that shares of its common stock will be distributed by bluebird bio to you on November 4, 2021. The date of distribution of 2seventy bio common stock is referred to in this information statement as the "distribution date."

No vote of bluebird bio stockholders is required for the distribution. Therefore, you are not being asked for a proxy, and you are requested not to send bluebird bio a proxy, in connection with the distribution. You do not need to pay any consideration, exchange or surrender your existing shares of bluebird bio common stock or take any other action to receive your shares of 2seventy bio common stock.

There is no current trading market for 2seventy bio common stock. 2seventy bio expects that a limited market, commonly known as a "when issued" trading market, will develop on or shortly before the record date for the distribution, and that "regular way" trading of 2seventy bio common stock will begin on the first trading day following the completion of the distribution. 2seventy bio's common stock on the Nasdaq Global Select Market under the symbol "TSVT".

We are an "emerging growth company" as that term is used in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act. As an emerging growth company, we will be subject to reduced public company reporting requirements.

In reviewing this information statement, you should carefully consider the matters described under the caption "*Risk Factors*" beginning on page 22.

Neither the U.S. Securities and Exchange Commission nor any state securities commission has approved or disapproved these securities or determined if this information statement is truthful or complete. Any representation to the contrary is a criminal offense.

This information statement does not constitute an offer to sell or the solicitation of an offer to buy any securities.

This information statement is first being mailed to bluebird bio stockholders on or about October 20, 2021.

The date of this information statement is October 18, 2021.

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PRESENTATION OF INFORMATION

Except as otherwise indicated or unless the context otherwise requires, the information included in this information statement about 2seventy bio assumes the completion of all of the transactions referred to in this information statement in connection with the separation and distribution.

Unless the context otherwise requires, references in this information statement to the following terms shall have the following respective meanings:

- "bluebird bio" refers to bluebird bio, Inc., a Delaware corporation, and its consolidated subsidiaries;
- "distribution" refers to the distribution by bluebird bio to bluebird bio stockholders of record as of the record date of all of the outstanding shares of 2seventy bio, as further described in this information statement;
- "separation" refers to the separation of bluebird bio's oncology portfolio and programs from bluebird bio's severe genetic disease portfolio and programs, and the creation, as a result of the distribution, of an independent, publicly traded company, 2seventy bio, that holds the oncology portfolio and programs, as further described in this information statement; and
- "2seventy bio," "we," "us," "our," "our company" and "the company" refer to 2seventy bio, Inc., a Delaware corporation, together with its subsidiaries, as the context requires, in each case as they will exist, assuming the completion of all the transactions referred to in this information statement in connection with the separation and the distribution.

This information statement describes the portfolio and programs to be transferred to 2seventy bio by bluebird bio in the separation as if the transferred portfolio and programs were 2seventy bio's portfolio and programs for all historical periods described. References in this information statement to 2seventy bio's historical assets, liabilities, products, businesses or activities of 2seventy bio's portfolio and programs are generally intended to refer to the historical assets, liabilities, products, businesses or activities of the transferred portfolio and programs as they were conducted as part of bluebird bio prior to the separation.

You should not assume that the information contained in this information statement is accurate as of any date other than the date set forth on the cover. Changes to the information contained in this information statement may occur after that date, and we undertake no obligation to update the information, except in the normal course of our public disclosure obligations or as required by applicable law.

Websites described in this information statement and the content therein or connected thereto shall not be deemed incorporated into this information statement.

Trademarks, Trade Names and Service Marks

2seventy bio owns and has rights to use the trademarks, service marks and trade names that it uses in conjunction with the operation of its business, including 2seventy bio, 2seventybio, and 2seventy. In addition, 2seventy bio's trademarks are undergoing examination and registration in the United States and other jurisdictions. 2seventy bio's trademark rights may be limited to select markets. Each trademark, trade name or service mark of any other company appearing in this information statement is, to 2seventy bio's knowledge, owned by such other company.

Industry and Other Data

This information statement contains estimates, projections and other information concerning our industry, our business, and the markets for certain diseases, including data regarding the estimated size of those markets, and the incidence and prevalence of certain medical conditions. Information that is based on estimates, forecasts, projections, market research or similar methodologies is inherently subject to uncertainties and actual events or circumstances may differ materially from events and circumstances reflected in this information. Unless otherwise expressly stated, we obtained this industry, business, market and other data from reports, research surveys, studies and similar data prepared by market research firms and other third parties, industry, medical and general publications, government data and similar sources.

QUESTIONS AND ANSWERS ABOUT THE SEPARATION AND DISTRIBUTION

What is 2seventy bio and why is bluebird bio separating 2seventy bio’s portfolio and programs and distributing 2seventy bio's common stock?	2seventy bio, which is currently a wholly owned subsidiary of bluebird bio, was formed to hold bluebird bio's oncology portfolio and programs. The separation of 2seventy bio from bluebird bio and the distribution of 2seventy bio common stock are intended to provide you with equity investments in two separate, independent public companies, each of which is able to focus on its respective business strategies. bluebird bio and 2seventy bio believe the separation will enable each business to pursue focused growth and investment strategies in its respective therapeutic areas of expertise resulting in the enhanced long-term performance of each business, as discussed in “The Separation and Distribution—Overview” and “The Separation and Distribution—Reasons for the Separation.”
Why am I receiving this document?	bluebird bio is delivering this information statement to you because you are a holder of record of shares of bluebird bio common stock. If you remain a holder of shares of bluebird bio common stock as of the close of business on October 19, 2021, you will be entitled to receive one share of 2seventy bio common stock for every three shares of bluebird bio common stock that you held of record at the close of business on such date. This information statement will help you understand how the separation will affect your investment in bluebird bio and your investment in 2seventy bio after the distribution.
How will the separation of 2seventy bio from bluebird bio work?	To accomplish the separation, bluebird bio will distribute all of the outstanding shares of 2seventy bio common stock to bluebird bio stockholders on a pro rata basis.
Why is the separation of 2seventy bio structured as a distribution?	bluebird bio believes that a generally tax-free distribution for U.S. federal income tax purposes of shares of 2seventy bio common stock to the bluebird bio stockholders is an efficient way to separate its oncology portfolio and programs in a manner that will create long-term value for bluebird bio, 2seventy bio and their respective stockholders. For more information, see “The Separation and Distribution—Conditions to the Distribution.”
What is the record date for the distribution?	The record date for the distribution will be October 19, 2021.

When will the distribution occur?	It is expected that all of the shares of 2seventy bio common stock will be distributed by bluebird bio on November 4, 2021, to holders of record of bluebird bio common stock as of the close of business on October 19, 2021. We refer to the date on which shares of 2seventy bio common stock are distributed as the "distribution date."
What do stockholders need to do to participate in the distribution?	Nothing. Stockholders of bluebird bio as of the record date will not be required to take any action to receive 2seventy bio common stock, but are urged to read this entire information statement carefully. No stockholder approval of the distribution is required or sought. Therefore, you are not being asked for a proxy to vote on the separation, and you are requested not to send us a proxy. You will neither be required to pay anything for the shares of 2seventy bio common stock nor be required to surrender any shares of bluebird bio common stock to participate in the distribution. Please do not send in your bluebird bio stock certificates. The distribution will not affect the number of outstanding shares of bluebird bio common stock or any rights of bluebird bio stockholders, although it will affect the market value of each outstanding share of bluebird bio common stock. See "Questions and Answers about the Separation and Distribution—Will the distribution affect the market price of my bluebird bio common stock?" for more information.
How will bluebird bio distribute shares of 2seventy bio common stock?	Registered stockholders: If you are a registered stockholder (meaning you hold physical bluebird bio stock certificates or you own your shares of bluebird bio common stock directly through an account with bluebird bio's transfer agent, American Stock Transfer & Trust, LLC), the distribution agent, American Stock Transfer & Trust Company, LLC, will credit the number of whole shares of 2seventy bio common stock you receive in the distribution to your book-entry account on or shortly after the distribution date, and the distribution agent will mail you a check for any cash in lieu of fractional shares you are entitled to receive. "Street name" or beneficial stockholders: If you own your shares of bluebird bio common stock beneficially through a bank, bluebird bio or other nominee, your bank, broker or other nominee will credit your account with the number of whole shares of 2seventy bio common stock you receive in the distribution on or shortly after the distribution date. Please contact your bank, broker or other nominee for further information about your account.

	We will not issue any physical stock certificates to any stockholders receiving shares in the distribution, even if requested. See “The Separation and Distribution—When and How You Will Receive the Distribution” for more information.
How many shares of 2seventy bio common stock will I receive in the distribution?	bluebird bio will distribute to you one share of 2seventy bio common stock for every three shares of bluebird bio common stock you hold of record as of the close of business on October 19, 2021, the record date. Based on approximately 69,862,379 shares of bluebird bio common stock outstanding as of September 27, 2021, a total of approximately 23,287,457 shares of 2seventy bio common stock will be distributed. For more information, see “The Separation and Distribution—The Number of Shares of 2seventy bio Common Stock You Will Receive.”
Will 2seventy bio issue fractional shares in the distribution?	2seventy bio will not distribute fractional shares of its common stock in the distribution. Instead, all fractional shares that bluebird bio registered stockholders would otherwise have been entitled to receive will be aggregated into whole shares and sold in the open market by the distribution agent. We expect the distribution agent, acting on behalf of bluebird bio, to take about two weeks after the distribution date to fully distribute the aggregate net cash proceeds of these sales on a pro rata basis (based on the fractional share such holder would otherwise be entitled to receive) to those stockholders who would otherwise have been entitled to receive fractional shares. Recipients of cash in lieu of fractional shares will not be entitled to any interest on the amounts of payment made in lieu of fractional shares. For more information, see “The Separation and Distribution—The Number of Shares of 2seventy bio Common Stock You Will Receive.”
What are the conditions to the distribution?	The distribution is subject to the satisfaction (or waiver by bluebird bio in its sole discretion) of a number of conditions to be set forth in the separation agreement, including, among others, that bluebird bio will have received a private letter ruling from the Internal Revenue Service, or the IRS, and an opinion from Goodwin Procter LLP, both satisfactory to bluebird bio’s board of directors and both continuing to be valid, together confirming that the distribution, together with certain related transactions, generally is tax-free for U.S. federal income tax purposes under Sections 355 and 368(a)(1)(D) of the Internal Revenue Code of 1986, as amended, or the Code.

	bluebird bio and 2seventy bio cannot assure you that any or all of these conditions will be met, and bluebird bio may waive any of these conditions to the distribution. In addition, bluebird bio can determine, at any time, not to proceed with the distribution. For more information, see "The Separation and Distribution—Conditions to the Distribution."
What is the expected date of completion of the distribution?	The completion and timing of the distribution are dependent upon a number of conditions. It is expected that the shares of 2seventy bio common stock will be distributed by bluebird bio on November 4, 2021 to the holders of record of shares of bluebird bio common stock as of the close of business on the record date. However, no assurance can be provided as to the timing of the distribution or that all conditions to the distribution will be met.
Can bluebird bio decide to cancel the distribution of 2seventy bio common stock even if all the conditions have been met?	Yes, until the distribution has occurred, bluebird bio has the right to terminate the distribution, even if all of the conditions are satisfied. See "The Separation and Distribution—Conditions to the Distribution" for more information.
What if I want to sell my bluebird bio common stock or my 2seventy bio common stock?	You should consult with your advisors, such as your broker, bank or tax advisor.
What is "regular way" and "ex-distribution" trading of bluebird bio stock?	Beginning on or shortly before the record date and continuing up to and including the distribution date, it is expected that there will be two markets in shares of bluebird bio common stock: a "regular way" market and an "ex-distribution" market. Shares of bluebird bio common stock that trade in the "regular way" market will trade with an entitlement to shares of 2seventy bio common stock distributed pursuant to the distribution. Shares that trade in the "ex-distribution" market will trade without an entitlement to shares of 2seventy bio common stock distributed pursuant to the distribution. If you hold shares of bluebird bio common stock on the record date and you decide to sell any shares of bluebird bio common stock before the distribution date, you should make sure your broker, bank or other nominee understands whether you want to sell your shares of bluebird bio common stock with or without your entitlement to receive 2seventy bio common stock pursuant to the distribution. See "The Separation and Distribution—Trading Between the Record Date and Distribution Date" for more information.

Where will I be able to trade shares of 2seventy bio common stock?	Currently, there is no public market for 2seventy bio common stock. 2seventy bio's common stock is approved for listing on the Nasdaq Global Select Market under the symbol "TSVT". 2seventy bio anticipates that trading in shares of its common stock will begin on a "when issued" basis on or shortly before the record date for the distribution and will continue up to and including the distribution date. "When issued" trading in the context of a separation refers to a sale or purchase made conditionally on or before the distribution date because the securities of the separated entity have not yet been distributed. "When issued" trades generally settle within two weeks after the distribution date. On the first trading day following the distribution date, any "when issued" trading of our common stock will end and "regular way" trading will begin. "Regular way" trading refers to trading after the security has been distributed and typically involves a trade that settles on the second full trading day following the date of the trade. See "The Separation and Distribution—Trading Between the Record Date and Distribution Date" for more information. We cannot predict the trading prices for our common stock before, on or after the distribution date.
What will happen to the listing of shares of bluebird bio common stock?	Shares of bluebird bio common stock will continue to trade on the Nasdaq Global Select Market after the distribution.
Will the number of shares of bluebird bio common stock that I own change as a result of the distribution?	No. The number of shares of bluebird bio common stock that you own will not change as a result of the distribution.

Will the distribution affect the market price of my bluebird bio common stock?	Yes. As a result of the distribution, bluebird bio expects the trading price of shares of bluebird bio common stock immediately following the distribution to be lower than the "regular way" trading price of such shares immediately prior to the distribution because the trading price will no longer reflect the value of the oncology portfolio and programs. Furthermore, as the market assesses bluebird bio following the separation, the trading price of shares of bluebird bio common stock may fluctuate. There can be no assurance that, following the distribution, the combined trading prices of bluebird bio common stock and 2seventy bio common stock will equal or exceed what the trading price of bluebird bio common stock would have been in the absence of the separation, and it is possible the post-distribution combined equity value of bluebird bio and 2seventy bio will be less than bluebird bio's equity value prior to the distribution.
What are the material U.S. federal income tax consequences of the distribution?	It is a condition to the distribution that bluebird bio receive a private letter ruling from the IRS and an opinion from Goodwin Procter LLP, both satisfactory to bluebird bio's board of directors and both continuing to be valid, together confirming that the distribution, together with certain related transactions, subject to certain caveats, generally is tax-free for U.S. federal income tax purposes under Sections 355 and 368(a)(1)(D) of the Code. Assuming that the distribution, together with certain related transactions, so qualifies, for U.S. federal income tax purposes, no gain or loss will be recognized by you and no amount will be included in your income upon receipt of shares of 2seventy bio common stock pursuant to the distribution. You will, however, recognize gain or loss for U.S. federal income tax purposes with respect to cash received in lieu of a fractional share of 2seventy bio common stock. You should consult your own tax advisor as to the particular consequences of the distribution to you, including the applicability and effect of any U.S. federal, state and local tax laws, as well as non-U.S. tax laws. For more information regarding the material U.S. federal income tax consequences of the distribution and for information regarding the types of investors subject to special rules to whom the above summary may not apply, see "Material U.S. Federal Income Tax Consequences."

How will I determine my tax basis in the shares of 2seventy bio common stock I receive in the distribution?	For U.S. federal income tax purposes, generally, your aggregate basis in the common stock that you hold in bluebird bio and the new 2seventy bio common stock received in the distribution (including any fractional share interest in 2seventy bio common stock for which cash is received) will equal the aggregate basis in the shares of bluebird bio common stock held by you immediately before the distribution, allocated between your shares of bluebird bio common stock and 2seventy bio common stock (including any fractional share interest in 2seventy bio common stock for which cash is received) you receive in the distribution in proportion to the relative fair market value of each on the distribution date. You should consult your own tax advisor as to the particular consequences of the distribution to you, including the application of the tax basis allocation rules and the application of state, local and non-U.S. tax laws. For more information regarding the material U.S. federal income tax consequences of the distribution and for information regarding the types of investors subject to special rules to whom the above summary may not apply, see "Material U.S. Federal Income Tax Consequences."
What will 2seventy bio's relationship be with bluebird bio following the distribution?	To effect a decisive and efficient separation into two thriving companies, 2seventy bio intends to enter into a separation agreement and certain other agreements with bluebird bio, including a tax matters agreement, an employee matters agreement, an intellectual property license agreement, a transition services agreement under which we will temporarily receive certain services from bluebird bio and a second transition services agreement under which we will temporarily provide certain services to bluebird bio. These agreements will provide for the separation between bluebird bio and 2seventy bio of the assets, employees, liabilities and obligations (including investments, property and employee benefits) of bluebird bio attributable to periods prior to, at and after the distribution and will govern the relationship between bluebird bio and 2seventy bio subsequent to the completion of the distribution. For additional information regarding the separation agreement and other transaction agreements, see "Risk Factors—Risks Related to the Separation" and "Certain Relationships and Related Person Transactions—Agreements with bluebird bio."

Who will manage 2seventy bio after the distribution?	2seventy bio will benefit from having in place a management team with a substantial background in the biotechnology business. 2seventy bio's management team possesses deep knowledge of and experience in its industry. 2seventy bio's management team is expected to include Nick Leschly, bluebird bio's president and chief executive officer who is expected to be 2seventy bio's president and chief executive officer after the distribution, William D. Baird, bluebird bio's chief financial officer who is expected to be 2seventy bio's chief financial officer after the distribution, and Philip Gregory who is expected to be 2seventy bio's chief scientific officer after the distribution. For more information regarding bluebird bio's expected management team and leadership structure, see "Management."
Are there risks associated with owning 2seventy bio common stock?	Yes. Ownership of 2seventy bio common stock is subject to both general and specific risks related to 2seventy bio's business, the industry in which it operates, its ongoing relationships with bluebird bio and its status as a separate, publicly traded company. Ownership of 2seventy bio common stock is also subject to risks related to the separation. These risks are described in the "Risk Factors" section of this information statement beginning on page 22. You are encouraged to read that section carefully.
Does 2seventy bio plan to pay dividends?	2seventy bio does not expect to pay a regular cash dividend following the distribution. The payment of any dividends in the future, and the timing and amount thereof, is within the discretion of 2seventy bio's board of directors. See "Dividend Policy."
Who will be the distribution agent, transfer agent and registrar for the 2seventy bio common stock?	The distribution agent, transfer agent and registrar for 2seventy bio common stock will be American Stock Transfer & Trust Company, LLC. For registered holders with questions relating to the transfer or mechanics of the stock distribution, you should contact: Address: 6201 15th Avenue, Brooklyn, NY 11219, Attn: Reorganization Department Tel: (877) 248-6417 (toll-free) or (718) 921-8317 E-mail: info@astfinancial.com
How can I contact bluebird bio or 2seventy bio with any questions?	Before the distribution, if you have any questions relating to bluebird bio or 2seventy bio's business performance, you should contact:

bluebird bio, Inc.
Investor Relations Department
60 Binney Street
Cambridge, MA 02142
Tel: 617-245-2107
E-mail: investor@bluebirdbio.com

After the distribution, 2seventy bio stockholders who have any questions relating to 2seventy bio's business performance should contact 2seventy bio at:

2seventy bio, Inc.
Investor Relations Department
60 Binney Street
Cambridge, MA 02142
Tel: 617-914-8736
E-mail: elizabeth.pingpank@2seventybio.com

INFORMATION STATEMENT SUMMARY

The following is a summary of material information discussed in this information statement. This summary may not contain all the details concerning the separation or other information that may be important to you. To better understand the separation and 2seventy bio's business and financial position, you should carefully review this entire information statement, including the risks discussed under "Risk Factors."

Except as otherwise indicated or unless the context otherwise requires, the information included in this information statement assumes the completion of all of the transactions referred to in this information statement in connection with the separation. Some of the statements in this summary constitute forward-looking statements. See "Cautionary Statement Concerning Forward-Looking Statements."

Overview

2seventy bio is a cell and gene therapy company focused on the research, development, and commercialization of transformative treatments for cancer. We are led by an accomplished team with significant expertise and experience in this field, from discovery through clinical development to regulatory approval of Abecma (idecabtagene vicleucel, or ide-cel), the first FDA-approved chimeric antigen receptor technology (CAR T) cell therapy for multiple myeloma. Our approach combines our expertise in T cell engineering technology and lentiviral vector gene delivery approaches, experience in research, development, and manufacturing of cell therapies and a suite of technologies that can be selectively deployed to develop highly innovative, targeted cellular therapies for patients with cancer. We are advancing multiple preclinical and clinical programs in oncology and, together with our partner Bristol-Myers Squibb (BMS), delivering Abecma to multiple myeloma patients in the United States following approval by the FDA of Abecma in March 2021 for the treatment of adults with multiple myeloma who have received at least four prior lines of therapy, including an immunomodulatory agent, a proteasome inhibitor and an anti-CD38 monoclonal antibody.

In recent years, growing understanding of cancer cell metabolism and genomics, as well as of the body's immune response to tumor cells, has led to the development of new classes of therapies against cancer targets and pathways that have dramatically reshaped the treatment landscape. The advent of immunotherapy, particularly engineered cell therapies, has offered the potential of moving past the treatment paradigm of maintenance of cancer as a "chronic" disease. However, there remain few curative therapies and, in some settings such as solid tumors, current approaches do not offer significant depth or durability of outcome for most cancer types and patients. Monotherapies have historically been of limited efficacy in cancer, and drugs are typically combined to deliver an outsized effect relative to the action of any of the individual components. One potential advantage of combination therapies is the ability to address the heterogeneity of single target expression and/or mechanisms for relapse and resistance specific to a particular mechanism or target.

While medicines such as Abecma have highlighted the power of first-generation CAR T cell therapy by achieving previously unobtainable levels of efficacy in the late line setting, we believe that to be broadly successful in the treatment of cancer, a combination therapy approach is necessary, and that our multiplex approach to next-generation autologous cellular therapy, which allows multiple encoded mechanisms of action to be delivered within a single drug product, represents an attractive solution. Based on our experience in the research and development of Abecma, we believe we can develop next-generation, engineered cell therapies to bring new options to patients suffering from a broad range of different tumor types.

In designing our next-generation product candidates, we aim to address the limitations of first-generation T cell therapies by augmenting them with additional technologies. Our approach is to create multiplex engineered cell therapies by combining: (1) CAR and T cell receptor technology, which programs T cells to recognize and kill cancer cells based on the cell surface expression or presentation of intracellular protein targets, respectively; (2) dual-targeting CAR architecture for multi-target tumor cell recognition; (3) our core lentiviral gene transfer technology which delivers these genetic cargos (and more) to program a patient's own T cells to the kill the cancer cells; (4) our megaTAL-based gene editing technology which allows us to perform site specific gene addition or deletion from the genome to improve the properties of the T cell; and (5) genetically encoded technologies for

engineering T cells to enhance the cytotoxic activity and reprogram the tumor microenvironment for more effective anti-tumor responses.

Our Strategy

Our strategy is to apply our broad range of technologies to design multiplex product candidates that address the key treatment challenges in cancer. Unlike other oncology-focused companies in our space, we believe our breadth of technology enables us to develop tailored products focused on the specific areas of cancer biology we have identified. We selectively combine the relevant features and components from our range of tools and technologies to address the defined attributes of a cellular therapy necessary for anti-tumor effect.

To execute on our strategy, we plan to:

- Commercialize Abecma and develop bb21217 through our collaboration with BMS, the learnings from which allow us to leverage our clinical experience and product revenue stream to further invest in our next-generation proprietary programs.
- Leverage our leadership position in autologous CAR T therapies to advance into the clinic our next-generation programs in B cell non-Hodgkin's lymphoma, acute myeloid leukemia, and multiple myeloma.
- Apply our multiplex approach to the discovery and design of transformative cell and gene therapy products for the treatment of solid tumors.
- Seek to extend our approach to other cell types beyond T cells and to include allogeneic approaches, as we gain additional experience in our autologous T cell programs.
- Build upon our existing internal lentiviral vector manufacturing know-how and experience through selective investments in manufacturing collaborations and expanding our internal capabilities over time, with the objectives of enabling rapid iteration on clinical learnings into research and development, increasing the efficiency of manufacturing processes, and improving the overall patient and healthcare professional experience.

Our Technologies

Our oncology programs use a lentiviral vector to deliver the genetic cargo necessary to program a patient's own T cells to recognize specific proteins or protein fragments on the surface of cancer cells to kill the cancer cells. Our current programs are based on CAR technology to program T cells to recognize cancer cells based on expression of specific cell surface antigens, and T cell receptor technology to program T cells to recognize cancer cells based on protein fragments derived from either intracellular or extracellular proteins displayed on the tumor cell surface. The genetically engineered T cells are designed to supplement a patient's immune system and may be further engineered to overcome immune evasion mechanisms employed by cancer cells. Our approach is to create multiplex engineered cell therapies by combining our foundational lentiviral vector and CAR/T cell receptor (TCR) technology with next-generation tools to address the challenges in existing cancer treatments.

- **Dual-Targeting** Polyclonal responses are a hallmark of adaptive immunity, but most T cell therapies have been devised with antigen receptors specific to a single target antigen. There are now many documented cases of cancer deploying its intrinsic genetic plasticity to escape mono-targeted T cell therapies (both with cellular and more classical modalities, such as small molecules and antibodies). In such cases, our solution is to utilize a dual-targeting antigen receptor, including a multi-chain, dual-targeting architecture that is able to respond when either target antigen is present on a cancer cell, as well as an architecture that leverages the unique properties of humanized single-domain camelid-derived antibodies.
- **DARIC.** We have developed a pharmacologically-regulated split antigen receptor architecture, which we refer to as DARIC, that comprises separate antigen targeting and signal transduction componentry. DARIC receptors become poised for anti-tumor function only when the two components are brought together as heterodimers, a process that is strictly dependent on the bridging function of the drug rapamycin. This technology enables pharmacological, 'on-demand' control of engineered T cell responses. Controlling the

‘on’ and ‘off’ states of engineered T cells also creates opportunities to pursue cancers and cancer targets with disease characteristics and expression profiles that are incompatible with constitutively responsive antigen receptors.

- **Reversal of immunosuppression.** Patients who present in the clinic with advanced metastatic disease are host to tumors that have evolved to evade endogenous immunity via a variety of mechanisms. Tumor infiltrating T cells lose potency over time due to repetitive antigen stimulation and exhaustion in a tumor microenvironment that suppresses T cell function. Checkpoint engagement, hypoxia, poor nutrient conditions, and exposure to immunosuppressive cell types and cytokines all significantly blunt T cell potency and thwart attempts to regress tumors in clinically meaningful ways. We have developed a suite of synthetic biology innovations that antagonize and rewire immunosuppressive signaling and response pathways. We have focused significant attention on transforming growth factor beta (TGFβ), a profoundly immunosuppressive cytokine found at high levels in many solid tumors. Our chimeric TGFβ flip receptor (CTBR) technology converts this suppressive signal into a supportive interleukin receptor signal that enhances T cell function. Suppressive to enhancing signal conversion operates in a localized, engineered T cell intrinsic manner, enhancing potency within the microenvironment of the tumor where the highest concentrations of activated TGFβ ligand are present. We have also developed several approaches to modulate T cell metabolism to allow for enhanced function and potency in the metabolically challenging tumor microenvironment.

- **Co-stimulation**. Parallel track costimulatory domains, also known as chimeric costimulatory receptors, offer a unique set of functional attributes that culminate in enhanced anti-tumor activity. This technology pairs enhanced targeting breadth with a qualitatively distinct and more potent functional response, simultaneously countering two potential mechanisms of resistance.

- **Gene editing.** megaTALs are highly specific, compact nucleases that efficiently catalyze the formation and mutagenic resolution of double-stranded breaks at pre-specified genetic target sequences. Using our megaTAL gene editing platform, we have demonstrated that disrupting genes that intersect with T cell signaling and response pathways can promote more potent immune responses. In addition, we have developed a full suite of on-target editing assays, functional bioassays, and off-target discovery and verification analytics to deeply characterize gene editing events and their functional consequences in target cells enabling the potential application of this technology in the clinical setting.

- **mRNA capabilities**. We have also developed messenger RNA (mRNA) capabilities that enable transient gene expression, both in cells cultured ex vivo and for organ-specific in vivo delivery. We manufacture mRNA starting from a proprietary plasmid template outfitted with an encoded poly-A tract, an approach that results in highly homogenous mRNA species following in vitro transcription. Our purification process includes double-stranded RNA (dsRNA) depletion steps to minimize immunogenicity and optimize cell viability. A robust suite of analytical assays is in place to ensure that consistently pure and potent material is generated. We have developed clinical-scale electroporation processes for ex vivo mRNA delivery and are actively using these processes to improve T cell potency via our megaTAL gene editing platform. This technology can potentially be further leveraged to transiently express other factors that may be advantageous to ex vivo manufactured T cells.

- **Cellular chassis**. Beyond genetic modifications we are also developing approaches aimed at selecting for or enriching distinct cell types for tumor targeting that may be broadly applicable to both autologous and allogeneic settings. For instance, our bb21217 program utilizes a PI3K-inhibiting small molecule to enrich for memory-like T cells with the goal of extending the durability of action of our CAR T cells for multiple myeloma. In addition, we have developed approaches for the selection, transduction and expansion of gamma delta T cells. We believe gamma delta T cells may be useful in the allogeneic setting due to the absence of alloreactivity or graft-versus-host disease while demonstrating potent anti-tumor activity.

Further, we continue to invest in our core foundational technologies and build upon our leadership position in autologous engineered cell therapy products based on CAR and TCR approaches:

- **Next-generation lentiviral vector design**. With decades of experience in this technology, we have extensively refined the componentry and methodology behind lentiviral vector design and manufacturing. Our transfer plasmid design elements include several innovations that have created advanced gene expression tuning capabilities and the delivery of large and complex genetic payloads via transgene stacking. We have developed proprietary codon optimization algorithms, promoter variants, and regulatory elements that together enable constitutive and/or responsive expression profiles across a range of transgene expression levels. These mature capabilities enable highly efficient transfer of sophisticated genetic modules, such as the multiplex product concepts represented by our next-generation programs.

- **Target selection and validation**. Cancer targets with profiles that make them appropriate for cell therapy development have diverse structural features, biochemical properties, and sub-cellular distribution characteristics. To support novel target identification, we have developed significant in-house expertise and external collaborations in the areas of data mining, functional genomics, and primary tissue analysis. We have also built a full suite of target validation assays to perform confirmatory studies assessing tumor and normal tissue expression properties. In addition, we have developed significant internal expertise specific to the de-risking of potential off-target liabilities of TCR engineered T cells. We have focused the bulk of our efforts on select hematological and solid tumor indications. This approach allows us to deeply interrogate the target landscape in cancers where T cell therapies may have the highest potential for technical success.

- **Receptor engineering**. We have access to state-of-the-art binder capabilities through our collaboration arrangements that cover the full range of potential cancer targets. For intracellular targets of interest, our partners develop TCRs and fully humanized ‘peptide-in-groove’ (PiG) scFv reagents. For surface proteins, we have multiple providers of immunization-sourced, fully humanized scFv and single-domain reagents.

- **Manufacturing process innovations**. Our analytical development, clinical bioassays, correlative research, and data sciences teams have unique access to clinical trial data using CAR T therapies. We are continuously interrogating these data sets to isolate key manufacturing variables and correlates of clinical signals that enable hypothesis testing. These activities derive insights that inform process research directions for optimizing T cell manufacturing through reagents, processes, and culture timing, and for the discovery of underlying biological relationships between clinical and correlative data.

Summary of Risk Factors

An investment in 2seventy bio’s common stock is subject to a number of risks, including risks related to our business, risks related to the separation and risks related to our common stock. The following list of risk factors is not exhaustive. Please read the information in the section captioned “Risk Factors” for a more thorough description of these and other risks.

Risks Related to Our Business

- Because we have a limited operating history, valuing our business and predicting our prospects is challenging.
- Our business has incurred significant losses and we anticipate that we will continue to incur significant losses for the foreseeable future.
- We will need to raise additional funding to advance our product candidates, which may not be available on acceptable terms, or at all.
- Research and development of biopharmaceutical products is inherently risky. We may encounter substantial delays in our clinical studies, or we may fail to demonstrate safety and efficacy to the satisfaction of applicable regulatory authorities.

- If we encounter difficulties in enrolling subjects in our clinical studies, we could be delayed or prevented from proceeding with clinical trials of our product candidates.
- If the market opportunities for our approved product, Abecma, or any future products are smaller than we believe they are, and if we are not able to successfully identify patients and achieve significant market share, our revenues may be adversely affected and our business may suffer.
- We cannot predict when or if we will obtain marketing approval to commercialize our product candidates, and the marketing approval of our product and any future products may ultimately be for more narrow indications than we expect.
- Delays in the commencement and completion of clinical trials could increase costs and delay or prevent regulatory approval and commercialization of our product candidates.
- If our product candidates are ultimately not approved for any reason, our business, prospects, results of operations and financial condition would be adversely affected.
- Patients receiving T cell-based immunotherapies, such as Abecma or bb21217 in ongoing clinical trials, may experience serious adverse events, including neurotoxicity and cytokine release syndrome.
- Negative public opinion and increased regulatory scrutiny of gene therapy and genetic research may damage public perception of our product and any future product candidates.
- We may not be successful in our efforts to identify or discover additional product candidates.
- We are dependent on BMS for the successful commercialization of Abecma and successful development of bb21217.
- Obtaining and maintaining regulatory approval of our product candidates in one jurisdiction does not mean that we will be successful in obtaining regulatory approval of our product candidates in other jurisdictions.
- We rely on third parties to conduct some or all aspects of our lentiviral vector production, drug product manufacturing, and testing, and these third parties may not perform satisfactorily.
- We may not be successful in obtaining or maintaining necessary rights to gene therapy product components and processes for our development pipeline through acquisitions and in-licenses.
- We have limited experience as a commercial company and the marketing and sale any future approved drugs may be unsuccessful or less successful than anticipated.
- We are subject, directly or indirectly, to federal and state healthcare fraud and abuse laws, false claims laws and health information privacy and security laws.
- Even if we obtain regulatory approval for our product candidates, our product candidates may not achieve broad market acceptance by patients, physicians, healthcare payors or others in the medical community, which would limit the revenue that we generate from their sales.
- We face intense competition and rapid technological change and the possibility that our competitors may develop therapies that are more advanced or effective than ours, which may adversely affect our financial condition and our ability to successfully commercialize our product and any future products.
- Our prospects for success depend on our ability to retain our management team and to attract, retain and motivate qualified personnel.
- We will need to expand our organization and we may experience difficulties in managing this growth, which could disrupt our operations.

Risks Related to the Separation

- We may not achieve some or all of the expected benefits of the separation, and the separation could harm our business, prospects, financial condition and results of operations.
- We have no history of operating as an independent company, and we expect to incur increased administrative and other costs following the separation by virtue of our status as an independent public company.
- The separation may impede our ability to attract and retain key personnel, which could materially harm our business.
- The separation may result in disruptions to, and harm our relationships with, our strategic business partners.
- If the distribution, together with certain related transactions, does not qualify as a transaction that is generally tax-free for U.S. federal income tax purposes, bluebird bio and its stockholders could be subject to significant tax liabilities, and we could be required to indemnify bluebird bio for material taxes pursuant to indemnification obligations under the tax matters agreement.
- We may not be able to engage in attractive strategic or capital-raising transactions following the separation.
- Our agreements with bluebird bio may not reflect terms that would have resulted from negotiations with unaffiliated third parties.
- The combined post-separation value of bluebird bio and our common stock may not equal or exceed the pre-separation value of bluebird bio common stock.
- If the distribution occurs and you do not want to receive our common stock in the distribution, your sole recourse will be to divest yourself of your bluebird bio common stock prior to the record date.

The Separation and Distribution

In January 2021, bluebird bio announced its plans to separate its oncology portfolio and programs from its severe genetic disease portfolio and programs, and spin off its oncology portfolio and programs into a separate publicly traded company. The distribution is generally intended to be tax-free for U.S. federal income tax purposes to bluebird bio stockholders. See “The Separation and Distribution—Conditions to the Distribution” for more information.

In furtherance of this plan, on September 30, 2021, bluebird bio’s board of directors approved the distribution of all of the issued and outstanding shares of 2seventy bio common stock on the basis of one share of 2seventy bio common stock for every three shares of bluebird bio common stock issued and outstanding on October 19, 2021, the record date for the distribution. As a result of the distribution, 2seventy bio will become an independent, publicly traded company.

Immediately following the distribution, we estimate that 23,287,457 shares of 2seventy bio common stock will be issued and outstanding based on the number of shares of bluebird bio common stock outstanding as of September 27, 2021. The actual number of shares of 2seventy bio common stock issued in the distribution will be determined on October 19, 2021, the record date.

2seventy bio's Post-Distribution Relationship with bluebird bio

2seventy bio intends to enter into a separation agreement with bluebird bio, which is referred to in this information statement as the “separation agreement,” and various other agreements with bluebird bio, including a tax matters agreement, an employee matters agreement, an intellectual property license agreement, a transition services agreement under which we will temporarily receive certain services from bluebird bio and a second transition services agreement under which we will temporarily provide certain services to bluebird bio. These agreements will effectuate the separation and govern 2seventy bio's relationship with bluebird bio after the

distribution. These agreements will provide for the allocation between bluebird bio and 2seventy bio of bluebird bio's assets, employees, liabilities and obligations (including investments, property and employee benefits and tax-related assets and liabilities) attributable to periods prior to and after 2seventy bio's separation from bluebird bio. These agreements will also govern certain relationships between bluebird bio and 2seventy bio after the separation. For additional information regarding the separation agreement and the other related agreements, see "Risk Factors—Risks Related to the Separation" and "Certain Relationships and Related Person Transactions—Agreements with bluebird bio."

Reasons for the Separation

The bluebird bio board of directors believes that separating its oncology portfolio and programs from its severe genetic disease portfolio and programs is in the best interests of bluebird bio and its stockholders for a number of reasons, including that:

- the separation will allow each business to pursue its own operational and strategic priorities and more quickly respond to trends, developments and opportunities in its respective markets;
- the separation will create two separate and distinct management teams focused on each business's unique strategic priorities, target markets and corporate development opportunities;
- the separation will give each business opportunity and flexibility by pursuing its own investment, capital allocation and growth strategies consistent with its long-term objectives;
- the separation will enable the boards and management teams of each business to better align corporate performance goals with the specific vision, strategy, and objectives of each business; and
- the separation will allow investors to separately value each business based on the unique merits, performance and future prospects of each business, providing investors with two distinct investment opportunities.

The bluebird bio board of directors considered a number of other factors in evaluating the separation, including risks relating to the creation of a stand-alone company and possible increased overall costs as well as one-time separation costs, but concluded that the potential benefits of the separation outweighed these factors. For more information, see "The Separation and Distribution—Reasons for the Separation" and "Risk Factors" included elsewhere in this information statement.

Private Placement

On September 10, 2021, bluebird bio completed a private placement, pursuant to which bluebird bio issued and sold to certain institutional investors (the "investors") shares of bluebird bio common stock and pre-funded warrants to purchase shares of bluebird bio common stock. In connection with the distribution, 2seventy bio will issue to each investor a new warrant for the number of shares of 2seventy bio common stock that the investor would have been entitled to receive in connection with the distribution had the unexercised portion of such pre-funded warrant at the effective time of the distribution been fully exercised at the effective time of the distribution. 2seventy bio will also assume all of bluebird bio's obligations under the registration rights agreement that bluebird bio entered into with the investors, with respect to the shares of 2seventy bio common stock the investors receive (1) in connection with the distribution with respect to the purchased shares of bluebird bio common stock held as of the effective time of the distribution and (2) the shares of 2seventy bio common stock issuable upon exercise of such pre-funded warrants. See "Certain Relationships and Related Party Transactions—Private Placement" for more information.

Corporate Information

2seventy bio, Inc. was incorporated in the State of Delaware on April 26, 2021 for the purpose of holding bluebird bio's oncology portfolio and programs in connection with the separation described in this information statement. The contribution of the oncology portfolio and programs to 2seventy bio is occurring over a period of time prior to the distribution, and 2seventy bio will have no operations prior to such contribution. At the time of the

distribution, the address of 2seventy bio's principal executive offices will be 60 Binney Street, Cambridge, Massachusetts 02142. 2seventy bio will also maintain a website at www.2seventybio.com.

Reason for Furnishing this Information Statement

This information statement is being furnished solely to provide information to stockholders of bluebird bio who will receive shares of 2seventy bio common stock in the distribution. It is not, and is not to be construed as, an inducement or encouragement to buy or sell any of 2seventy bio's securities.

Implications of Being an Emerging Growth Company

2seventy bio qualifies as an "emerging growth company" as defined in the JOBS Act. As an emerging growth company, we may take advantage of specified reduced disclosure and other obligations that are otherwise applicable generally to public companies. These may include the following:

- reduced disclosure obligations regarding executive compensation in our periodic reports, proxy statements and registration statements;
- exemption from the requirements for holding a non-binding advisory vote on executive compensation or golden parachute arrangements;
- extended transition period for complying with new or revised accounting standards; and
- exemption from the auditor attestation requirement in the assessment of our internal control over financial reporting.

We may take advantage of these provisions for up to five years or such earlier time that we are no longer an emerging growth company. We will cease to be an emerging growth company on the date that is the earliest of (i) the last day of the fiscal year in which we have total gross annual revenues of $1.07 billion or more; (ii) the last day of our fiscal year following the fifth anniversary of the date of the distribution; (iii) the date on which we have issued more than $1 billion in nonconvertible debt during the previous three years; or (iv) the date on which we are deemed to be a large accelerated filer under the rules of the SEC.

SUMMARY HISTORICAL AND UNAUDITED PRO FORMA COMBINED FINANCIAL INFORMATION

The following table presents our summary historical and unaudited pro forma combined financial information. We derived the summary historical combined financial data as of December 31, 2020 and 2019 and for the years ended December 31, 2020, 2019 and 2018 from our audited combined financial statements included elsewhere in this information statement. We derived the summary historical combined financial data as of June 30, 2021 and for the six months ended June 30, 2021 and 2020 from our unaudited condensed combined financial statements included elsewhere in this information statement. The unaudited condensed combined financial statements have been prepared on the same basis as the audited combined financial statements. In the opinion of management, the unaudited data reflects all adjustments, consisting only of normal recurring adjustments, necessary for a fair statement of the financial information in those statements.

The summary historical combined financial data includes certain expenses of bluebird bio that were allocated to us for certain corporate functions, including senior management, legal, human resources, finance and information technology. These costs may not be representative of the future costs we will incur as an independent, publicly traded company. In addition, our historical financial information does not reflect changes that we expect to experience in the future as a result of our separation from bluebird bio, including changes in our cost structure, personnel needs, tax structure, capital structure, financing and business operations.

The following unaudited pro forma combined statement of operations for the six months ended June 30, 2021 and for the year ended December 31, 2020 gives effect to the separation as if it had occurred on January 1, 2020. The following unaudited pro forma combined balance sheet as of June 30, 2021 gives effect to the separation as if it had occurred on June 30, 2021. The unaudited pro forma adjustments are based on assumptions that management believes are reasonable under the circumstances and given the information available at this time. Refer to the notes to the unaudited pro forma combined financial statements included elsewhere in this information statement for a discussion of adjustments reflected in the unaudited pro forma combined financial statements. Consequently, the financial information included here may not necessarily reflect our financial position, results of operations and cash flows in the future or what our financial position, results of operations and cash flows would have been had we been an independent, publicly traded company during the periods presented.

For a better understanding of the financial information included here, this section should be read in conjunction with the discussion in "Management's Discussion and Analysis of Financial Condition and Results of Operations" and the "Unaudited Pro Forma Combined Financial Statements" and corresponding notes, and the audited combined financial statements and unaudited condensed combined financial statements and corresponding notes included elsewhere in this information statement.

	Year ended December 31,			
(in thousands)	Pro Forma 2020	2020	2019	2018
Statement of Operations:				
Total revenues	$ 248,122	$ 248,122	$ 44,296	$ 54,579
Research and development expense	287,958	296,467	297,645	200,490
Selling, general and administrative expense	103,228	90,897	81,646	53,631
Net loss	(129,836)	(120,114)	(320,594)	(199,749)

	As of December 31,	
(in thousands)	2020	2019
Balance Sheet:		
Total assets	$ 312,620	$ 314,949
Total current liabilities	75,868	103,397
Total liabilities	237,991	271,257

(in thousands)	Six months ended June 30,		
	Pro Forma 2021	2021	2020
Statement of Operations:			
Total revenues	$ 19,229	$ 19,229	$ 219,782
Research and development expense	146,000	141,263	155,332
Selling, general and administrative expense	51,793	46,029	46,847
Net (loss) income	(185,239)	(171,238)	28,760

(in thousands)	As of June 30,	
	Pro Forma 2021	2021
Balance Sheet:		
Total assets	$ 670,022	$ 303,744
Total current liabilities	102,087	103,783
Total liabilities	253,150	255,055

RISK FACTORS

You should consider carefully the following risks and conditions, together with all the other information in this information statement, including our financial statements and notes thereto, when evaluating our common stock. The impact from these risks and conditions may be materially adverse to our business, prospects, financial condition and results of operations. The risks described below are not the only risks we face. Additional risks and uncertainties not currently known to us or those we currently view to be immaterial also may materially harm our business, prospects, financial condition and results of operations. As a result, the trading price of our common stock could decline, which could decrease the value of the shares you hold.

Our business may be materially and adversely affected by the ongoing COVID-19 pandemic. The COVID-19 pandemic has had, and will likely continue to have, an impact on various aspects of our business and that of third parties on which we rely. The extent to which the COVID-19 pandemic impacts our business will depend in part on future developments, which are uncertain and unpredictable in nature.

In December 2019, a novel strain of coronavirus (COVID-19) was reported and in March 2020, the World Health Organization characterized COVID-19 as a pandemic. The COVID-19 pandemic, which has continued to spread, and the related adverse public health developments, including orders to shelter-in-place, travel restrictions, and the imposition of additional requirements on businesses, have adversely affected workforces, organizations, healthcare communities, economies, and financial markets globally, leading to an economic downturn and increased market volatility. It has also disrupted the normal operations of businesses across industries, including ours. As a result of the COVID-19 pandemic, we are experiencing disruptions in our operations and business, and those of third parties upon whom we rely. We cannot reasonably assess or predict at this time the full extent of the negative impact that the COVID-19 pandemic and related effects may have on our business, financial condition, results of operations and cash flows. We expect to continue experiencing these disruptions in our operations and those of our third parties for an unknown period of time, as the trajectory of the COVID-19 pandemic remains uncertain and continues to evolve in the United States and globally. These impacts, which may materially and adversely affect our business, include the following:

- We currently rely on BMS to continue to develop, manufacture, and commercialize Abecma, including conducting ongoing clinical studies. The COVID-19 pandemic has had, and will likely continue to have, an impact on various aspects of BMS's development and commercialization efforts. For example, policies at various clinical sites and federal, state, local and foreign laws, rules and regulations are continuing to evolve, including through the implementation of quarantines and travel restrictions, and direction of healthcare resources toward pandemic response efforts. Additionally, BMS and third parties in its supply chain may be subject to restrictions in operations arising from the COVID-19 pandemic and have experienced operational disruptions, which may affect activities necessary for the continued research, development, and commercialization efforts. Uncertainty as to when normal clinical study enrollment and patient treatment activities will resume may continue to affect BMS's operations. It is unknown how long these disruptions could continue.

- Health regulatory agencies globally may experience disruptions in their operations as a result of the COVID-19 pandemic. The FDA and comparable foreign regulatory agencies may have slower response times or lack resources to continue to monitor our clinical studies or to engage in other activities related to review of regulatory submissions in drug development. As a result, review, inspection, and other timelines may be materially delayed for an unknown period of time.

- We have implemented policies at our locations to mitigate the risk of exposure to COVID-19 by our personnel, including restrictions on the number of staff in any given research and development laboratory or manufacturing facility, a work-from-home policy applicable to the majority of our personnel, and a phased approach to bringing personnel back to our locations over time. Our increased reliance on personnel working from home may negatively impact productivity, or disrupt, delay, or otherwise adversely impact our business. In addition, this could increase our cyber security risk, create data accessibility concerns, and make us more susceptible to communication disruptions, any of which could adversely impact our business operations or delay necessary interactions with local and federal regulators, ethics committees,

manufacturing sites, research or clinical study sites and other important agencies and contractors. Furthermore, since the onset of the COVID-19 pandemic, our employees and contractors conducting research and development activities have been limited in the activities that they may conduct, and will continue to be subject to policies restricting access to our laboratories for an extended period of time. As a result, this could delay timely completion of preclinical activities, including completing Investigational New Drug-enabling studies or our ability to select future development candidates, and initiation of additional clinical trials for our development programs.

- The trading prices for shares of biopharmaceutical companies have been highly volatile as a result of the economic volatility and uncertainty caused by the COVID-19 pandemic. As a result, we may face difficulties raising capital through sales of shares of our common stock or such sales may be on unfavorable terms. In addition, a recession, depression or other sustained adverse market event resulting from the spread of the COVID-19 pandemic will materially and adversely affect our business, the value of our common stock, and our ability to operate under our operating plan and execute our strategy.

The extent of the impacts described above will depend on numerous evolving factors that we may not be able to accurately predict, including:

- the duration, severity, and scope of the pandemic in the United States and globally;
- the effectiveness of governmental, business and individuals' protocols and actions that have been and continue to be taken in response to the pandemic;
- the impact of the pandemic on economic activity and actions taken in response;
- the effect on patients, healthcare providers and business partners;
- demand for our products, including as a result of reduced patient visits to healthcare providers, travel restrictions, social distancing, quarantines and other containment measures;
- the ability to obtain or deliver sufficient and timely supplies, given the disruptions to the production capabilities of manufacturers and suppliers of Abecma, particularly with respect to the priority given to the development and manufacture of COVID-19 vaccines;
- our access to the debt and equity markets on satisfactory terms, or at all;
- disruptions in regulatory oversight and actions, as a result of significant and unexpected resources expended to address the COVID-19 by regulators and industry professionals; and
- any closures of our and our partners' offices, operations and facilities.

The ultimate impact of the COVID-19 pandemic on our business operations is highly uncertain and subject to change and will depend on future developments which are difficult to predict, including the duration of the pandemic, the ultimate geographic spread of the disease, additional or modified government actions, new information that will emerge concerning the severity and impact of COVID-19 and other actions taken to contain or address its impact in the short and long term, among others. We do not yet know the full extent of potential delays or impacts on our business, our commercialization efforts, our clinical studies, our research programs, healthcare systems or the global economy, and if the ultimate impact of the COVID-19 pandemic and the resulting uncertain economic and healthcare environment is more severe than we anticipated, we may not be able to execute on our current operating plan or on our strategy. If the duration of the COVID-19 pandemic and the associated period of business and social restrictions and economic uncertainty is longer than we anticipated, our cash, cash equivalents, and marketable securities may not be sufficient to fund the activities under our operating plan for the time period that we anticipated, and we may be required to revise our operating plan. To the extent the COVID-19 pandemic adversely affects our business and financial results, it may also have the effect of heightening many of the other risks described in this "Risk Factors" section.

Risks Related to Our Financial Position and Capital Needs

Because we have a limited operating history, valuing our business and predicting our prospects is challenging.

We were incorporated in April 2021. Although our business was conducted within bluebird bio prior to that time, we have no history as an independent company. We are developing an oncology pipeline of cell and gene therapies for cancer, the first of which, Abecma (ide-cel), was approved by FDA in March 2021. FDA granted approval of Abecma to Bristol Myers Squibb, bluebird bio's co-development partner, and although we intend to jointly commercialize this product with Bristol Myers Squibb through our co-development and co-promotion arrangement, we have never recognized revenue from product sales. Our operating activities to date have been limited primarily to organizing and staffing our company, business planning, raising capital, developing our technology, identifying potential product candidates and conducting a clinical trial of our most advanced product candidate, investigational B-cell maturation antigen (BCMA) directed chimeric antigen receptor (CAR) T cell therapy, bb21217.

To date, we have not engaged, on our own or through a third party, in commercial scale manufacturing of the lentiviral vector for Abecma, or conducted significant sales and marketing activities necessary for the commercialization of Abecma or obtained marketing approval of any of our other product candidates. Our short operating history offers limited insight into our prospects for success or even viability and we expect our operating results to be subject to frequent fluctuations. We will encounter challenges frequently experienced by early-stage biopharmaceutical companies in rapidly evolving fields, and we have not yet demonstrated an ability to successfully navigate such challenges. If we do not address the challenges we face successfully, our business, prospects, financial condition and results of operations will be materially harmed.

Our business has incurred significant losses and we anticipate that we will continue to incur significant losses for the foreseeable future. We have never recognized revenue from product sales and may never be profitable.

Our business has incurred operating losses due to costs incurred in connection with our research and development activities and general and administrative expenses associated with our operations. Our net losses (on a carve-out basis) for the years ended December 31, 2019 and 2020 were $320.6 million and $120.1 million, respectively, and for the six months ended June 30, 2021 was $171.2 million. We expect to incur significant losses for several years, as we continue our research activities and conduct development of, and seek regulatory approvals for, our product candidates.

The amount of our future net losses will depend, in part, on the rate of our future expenditures and our ability to recognize revenues. We have devoted significant financial resources to research and development, including our clinical and preclinical development activities, which we expect to continue for the foreseeable future. Following marketing approval, our future revenues will depend upon the size of any markets in which our product and any future products have received approval, and our ability to achieve sufficient market acceptance, reimbursement from third-party payors and adequate market share for our product and any future products in those markets.

We expect to continue to incur significant expenses and increasing operating losses for the foreseeable future. We anticipate that our expenses will increase substantially if and as we:

- continue our research and preclinical and clinical development of our product candidates, including any additional clinical trials of Abecma, which we are co-developing with BMS;
- conduct commercialization activities for Abecma, which we are co-promoting with BMS;
- obtain, build and expand manufacturing capacity, including capacity at third-party manufacturers;
- initiate additional research, preclinical, clinical or other programs as we seek to identify and validate additional product candidates;
- acquire or in-license other product candidates and technologies;
- maintain, protect and expand our intellectual property portfolio;

- attract and retain skilled personnel; and
- experience any delays or encounter issues with any of the above.

We expect to continue to incur significant losses for the foreseeable future. Our expenses could increase beyond expectations if we are required by the FDA, the European Medicines Agency, or the EMA, or other regulatory agencies, domestic or foreign, to perform clinical and other studies in addition to those that we currently anticipate. Even though Abecma has been approved by the FDA, and even if one or more of the product candidates that we develop is approved for commercial sale, we may never recognize revenue in amounts sufficient to achieve and maintain profitability. The net losses we incur may fluctuate significantly from quarter to quarter and year to year, such that a period-to-period comparison of our results of operations may not be a good indication of our future performance. In any particular quarter or quarters, our operating results could be below the expectations of securities analysts or investors, which could cause our stock price to decline.

We will need to raise additional funding to advance our product candidates, which may not be available on acceptable terms, or at all. Failure to obtain capital when needed may force us to delay, limit or terminate our product development efforts or other operations. Raising additional capital may dilute our existing stockholders, restrict our operations or cause us to relinquish valuable rights.

Following the completion of the separation, we expect that our cash and cash equivalents will be $441.2 million. Our management believes that our cash and cash equivalents at the time of separation will be sufficient to fund our current operating plan for at least 12 months following the completion of the separation.

We will require significant additional funding to advance our product candidates, alone or with strategic partners, through clinical studies and to seek marketing approval, as well as to continue advancing our research and development efforts with our other product candidates. We may also need to raise additional funds sooner than currently anticipated if we choose to pursue additional indications or geographies for our product candidates, identify additional product candidates to advance through clinical development or otherwise expand more rapidly than we presently anticipate. In addition, if we obtain marketing approval for any of our product candidates, we expect to incur significant expenses related to product sales, medical affairs, marketing, manufacturing and distribution.

Any additional fundraising efforts may divert our management from their day-to-day activities, which may adversely affect our ability to develop and commercialize our approved product and product candidates. In addition, we cannot guarantee that financing will be available in sufficient amounts or on terms acceptable to us, if at all. Moreover, the terms of any financing may adversely affect the holdings or the rights of our stockholders and the issuance of additional securities, whether equity or debt, by us, or the possibility of such issuance, may cause the market price of our shares to decline. The sale of additional equity or convertible securities would dilute all of our stockholders. The incurrence of indebtedness would result in increased fixed payment obligations and we may be required to agree to certain restrictive covenants, such as limitations on our ability to incur additional debt, limitations on our ability to acquire, sell or license intellectual property rights and other operating restrictions that could adversely impact our ability to conduct our business. We could also be required to seek funds through arrangements with collaborative partners or otherwise at an earlier stage than otherwise would be desirable and we may be required to relinquish rights to some of our technologies or product candidates or otherwise agree to terms unfavorable to us, any of which may have a material adverse effect on our business, operating results and prospects. Regardless of the terms of our debt or equity financing, our agreements and obligations under the tax matters agreement with bluebird bio may limit our ability to issue stock. See "— Risks Related to the Separation."

If we are unable to obtain funding on a timely basis, or if revenues from collaboration arrangements or product sales are less than we have projected, we may be required to significantly curtail, delay or discontinue one or more of our research or development programs or the commercialization of any product candidates or be unable to expand our operations or otherwise capitalize on our business opportunities, as desired, which could materially affect our business, financial condition and results of operations.

Risks Related to the Discovery, Product Development and Regulatory Approval of Our Product Candidates

Research and development of biopharmaceutical products is inherently risky. We may encounter substantial delays in our clinical studies, or we may fail to demonstrate safety and efficacy to the satisfaction of applicable regulatory authorities.

Our business depends heavily on successful clinical development, regulatory approvals and commercialization of Abecma and our product candidate, bb21217. Our current product candidates, other than bb21217 are still in preclinical development. Our current product candidates, as well as any we may discover in the future, will require substantial additional development and testing, as well as regulatory approvals, prior to commercialization.

Before obtaining regulatory approvals for the commercial sale of any of our product candidates, we must demonstrate through lengthy, complex and expensive preclinical and clinical studies that our product candidates are both safe and effective for use in each target indication. Each product candidate must demonstrate an adequate benefit-risk profile for its intended use in its intended patient population. In some instances, significant variability in safety or efficacy appear in different clinical studies of the same product candidate due to numerous factors, including changes in study protocols, differences in the number and characteristics of the enrolled subjects, variations in the dosing regimen and other clinical study parameters or the dropout rate among study participants. Product candidates in later stages of clinical studies often fail to demonstrate adequate safety and efficacy despite encouraging preclinical study and earlier clinical trial results. A number of companies in the biopharmaceutical industry have suffered significant setbacks in later-stage clinical studies. Most product candidates that begin clinical studies are never approved for commercialization by regulatory authorities.

If we encounter difficulties in enrolling subjects in our clinical studies, we could be delayed or prevented from proceeding with clinical trials of our product candidates.

Identifying and qualifying patients to participate in clinical studies of our product candidates is critical to our success. The timing of our clinical studies depends in part on the speed at which we can recruit patients to participate in testing our product candidates. The estimated incidence of our initial target indications, including non-Hodgkin's lymphoma and acute myeloid leukemia, the target indications for our product candidates, varies considerably. Determining the incidence of these conditions, including in specific geographies or demographic groups, is challenging. The lower the actual incidence of these conditions, the more challenges we will encounter enrolling subjects in our clinical studies, which could delay development of our product candidates. Clinical trial enrollment may also encounter difficulties for a variety of other reasons. The number of patients eligible for a clinical trial may be substantially limited by stringent eligibility criteria in a study protocol, such as the inclusion of biomarker-driven identification or other highly specific criteria related to stage of disease progression or to specific patient reported outcome measures. The number of patients required to power the statistical analysis of the study's endpoints may be very large leading to an extended enrollment period. Issues such as the proximity of subjects to a study site, the complexity of the study design, our ability to recruit investigators with appropriate skill and experience, competing clinical studies for similar therapies or targeting similar subjects, perceptions of the benefit-risk profile of the product candidate relative to other available therapies or product candidates, and ability to obtain and maintain institutional review board, or IRB, approvals and patient consents all could have a substantial impact on the timing of clinical trial enrollment. If we are unable to enroll sufficient subjects in clinical studies in a timely way, obtaining study results will be delayed, which may harm our business, prospects, financial condition, and results of operations.

If the market opportunities for our product or any future products are smaller than we believe they are, and if we are not able to successfully identify patients and achieve significant market share, our revenues may be adversely affected and our business may suffer.

We focus our research and development efforts on treatments for cancer. Our projections of both the number of people who have these diseases, as well as the subset of people with these diseases who have the potential to benefit from treatment with our product or any future products, are based on estimates. These estimates have been derived from a variety of sources, including scientific literature, surveys of clinics, patient foundations, or market research, and may prove to be incorrect. Further, new studies may change the estimated incidence or prevalence of these

diseases. The number of patients may turn out to be lower or more difficult to identify than expected. Additionally, the potentially addressable patient population for our product and any future products may be limited or may not be amenable to treatment with our products.

Even if we obtain significant market share for a product within an approved indication, because the potential target populations for our product and for the product candidates in our pipeline are small, we may never achieve profitability without obtaining marketing approval for additional indications. In the field of cancer, the FDA often approves new therapies initially only for use in patients with relapsed or refractory advanced disease. We expect to initially seek approval of our engineered cell therapy product candidates in cancer in this context. Subsequently, for those products that prove to be sufficiently beneficial, if any, we would expect to seek approval in earlier lines of treatment and potentially as a first line therapy, but there is no guarantee that our product candidates, even if approved, would be approved for earlier lines of therapy, and, prior to any such approvals, we may have to conduct additional clinical trials. For example, BMS received marketing approval from the FDA for Abecma as a treatment for adult patients with relapsed and refractory multiple myeloma who have not responded to, or whose disease has returned after, at least four prior lines of therapy. BMS is conducting additional studies with the intention to generate data to support marketing approvals for earlier lines of therapy in multiple myeloma, but there is no assurance that such studies will be successful or be sufficient.

Any of these factors may negatively affect our ability to recognize revenues from sales of our product and any future products and our ability to achieve and maintain profitability and, as a consequence, our business may suffer.

We cannot predict when or if we will obtain marketing approval to commercialize our product candidates, and the marketing approval of our product and any future products may ultimately be for more narrow indications than we expect. If our product candidates are not approved in a timely manner or at all for any reason, our business prospects, results of operations, and financial condition would be adversely affected.

Before obtaining marketing approval from regulatory authorities for the commercialization of our product candidates, we must conduct extensive clinical studies to demonstrate the safety, purity and potency, and efficacy, of the product candidates in humans. Clinical testing is expensive, time-consuming and uncertain as to outcome. There is a high failure rate for drugs and biologics proceeding through clinical studies. A number of companies in the pharmaceutical and biotechnology industries have suffered significant setbacks in later stage clinical studies even after achieving encouraging results in earlier stage clinical studies. We cannot guarantee that any clinical studies will be conducted as planned or completed on schedule, if at all. A failure of one or more clinical studies can occur at any stage of testing. Events that may prevent successful or timely completion of clinical development include:

- delays in reaching a consensus with regulatory agencies on study design;
- imposition of a clinical hold by regulatory agencies, after an inspection of our clinical study operations or study sites or due to unforeseen safety issues;
- delays in the testing, validation, manufacturing and delivery of our product candidates to the clinical sites;
- failure to obtain sufficient cells from patients to manufacture enough drug product or achieve target cell doses;
- delays in having patients complete participation in a study or return for post-treatment follow-up;
- clinical study sites or patients dropping out of a study;
- occurrence of serious adverse events associated with the product candidate that are viewed to outweigh its potential benefits; or
- changes in regulatory requirements and guidance that require amending or submitting new clinical protocols.

Furthermore, the timing of our clinical studies depends on the speed at which we can recruit eligible patients to participate in testing our product candidates. The conditions for which we plan to evaluate our current product

candidates in severe genetic diseases are rare disorders with limited patient pools from which to draw for clinical studies. The eligibility criteria of our clinical studies will further limit the pool of available study participants, and the process of finding and diagnosing patients may prove costly. Patients may be unwilling to participate in our studies because of negative publicity from adverse events in the biotechnology or gene therapy industries or for other reasons, including competitive clinical studies for similar patient populations. We may not be able to identify, recruit and enroll a sufficient number of patients, or those with required or desired characteristics to achieve diversity in a study, to complete our clinical studies in a timely manner. We have experienced delays in some of our clinical studies in the past, and we may experience similar delays in the future.

Results from previous or ongoing studies are not necessarily predictive of our future clinical study results, and initial or interim results may not continue or be confirmed upon completion of the study. There is limited data concerning long-term safety and efficacy following treatment with our engineered cell therapy product candidates. These data, or other positive data, may not continue or occur for these patients or for any future patients in our ongoing or future clinical studies, and may not be repeated or observed in ongoing or future studies involving our product candidates. Furthermore, our product candidates may also fail to show the desired safety and efficacy in later stages of clinical development despite having successfully advanced through initial clinical studies. There can be no assurance that any of these studies will ultimately be successful or support further clinical advancement or marketing approval of our product candidates. For instance, patients with relapsed and refractory multiple myeloma who have been treated with Abecma or the bb21217 product candidate in clinical trials have experienced disease progression. We have experienced unexpected results in the past, and we may experience unexpected results in the future.

Even if our product candidates demonstrate safety and efficacy in clinical studies, regulatory delays or rejections may be encountered as a result of many factors, including changes in regulatory policy during the period of product development. We may experience delays or rejections based upon additional government regulation from future legislation or administrative action, changes in regulatory agency policy, or additional regulatory feedback or guidance during the period of product development, clinical studies and the review process. The field of engineered cell therapy is evolving, and as more products are reviewed by regulatory authorities, regulatory authorities may impose additional requirements that were not previously anticipated. Regulatory agencies also may approve a treatment candidate for fewer or more limited indications than requested or may grant approval subject to the performance of post-marketing studies. In addition, regulatory agencies may not approve the labeling claims that are necessary or desirable for the successful commercialization of our treatment candidates. Furthermore, approvals by the EMA and the European Commission may not be indicative of what the FDA may require for approval. In general, the FDA requires the successful completion of two pivotal trials to support approval of a biologics licensing application, or BLA, but in certain circumstances, will approve a BLA based on only one pivotal trial. Additionally, certain factors beyond our and our collaborators' control may impact the timeliness of the regulatory reviews of our submissions or any applications for approval.

If our product candidates are ultimately not approved for any reason, our business, prospects, results of operations and financial condition would be adversely affected.

Delays in the commencement and completion of clinical trials could increase costs and delay or prevent regulatory approval and commercialization of our product candidates.

We cannot guarantee that clinical trials of our product candidates will be initiated or conducted as planned or completed on schedule, if at all. A failure of one or more clinical trials can occur at any stage of the clinical trial process, and other events may cause us to temporarily or permanently stop a clinical trial. Events that may prevent successful or timely commencement and completion of clinical development include:

- negative preclinical data;
- delays in receiving the required regulatory clearance from the appropriate regulatory authorities to commence clinical trials or amend clinical trial protocols, including any objections to our INDs or protocol amendments from the FDA;
- delays in reaching, or a failure to reach, a consensus with regulatory authorities on study design;

- delays in reaching, or failure to reach, agreement on acceptable terms with prospective CROs and clinical trial sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and trial sites;
- difficulties in obtaining IRB approval at each site;
- challenges in recruiting suitable patients to participate in a trial;
- the inability to enroll a sufficient number of patients in clinical trials to ensure adequate statistical power to detect statistically significant treatment effects;
- difficulties in having patients complete a trial or return for post-treatment follow-up;
- our CROs or clinical trial sites failing to comply with regulatory requirements or meet their contractual obligations to us in a timely manner, or at all, deviating from the protocol or dropping out of a clinical trial;
- unforeseen safety issues, including occurrence of treatment emergent adverse events associated with the product candidate that are viewed to outweigh the product candidate's potential benefits;
- difficulties in adding new clinical trial sites;
- ambiguous or negative interim results;
- lack of adequate funding to continue the clinical trial;
- difficulties in manufacturing sufficient quantities of acceptable product candidate for use in clinical trials in a timely manner, or at all; or
- the COVID-19 pandemic, which may result in clinical site closures, delays to patient enrollment, patients discontinuing their treatment or follow up visits or changes to trial protocols.

We could encounter delays if a clinical trial is suspended or terminated by us, by the IRBs of the institutions in which such trials are being conducted, by a Data Safety Monitoring Board, or DSMB, for such trial or by the FDA or other regulatory authorities. Such authorities may impose such a suspension or termination due to a number of factors, including failure to conduct the clinical trial in accordance with regulatory requirements or our clinical protocols, inspection of the clinical trial operations or trial site by the FDA or other regulatory authorities resulting in the imposition of a clinical hold, unforeseen safety issues or adverse side effects, failure to demonstrate a benefit from using a drug, changes in governmental regulations or administrative actions or lack of adequate funding to continue the clinical trial. If we experience delays in the completion of, or termination of, any clinical trial of our product candidates, the commercial prospects of our product candidates will be harmed, and our ability to recognize product revenues from any of these product candidates will be delayed. In addition, any delays in completing our clinical trials will increase our costs, slow down our product candidate development and approval process and jeopardize our ability to commence product sales and recognize revenues. Any of these occurrences may harm our business, financial condition, results of operations and prospects significantly. In addition, many of the factors that cause, or lead to, a delay in the commencement or completion of clinical trials may also ultimately lead to the denial of regulatory approval of our product candidates.

In addition, data obtained from trials and studies are susceptible to varying interpretations, and regulators may not interpret our data as favorably as we do, which may delay, limit or prevent regulatory approval. Our clinical trial results may not be successful, or even if successful, may not lead to regulatory approval.

The regulatory approval processes of the FDA and comparable foreign regulatory authorities are lengthy, time-consuming and inherently unpredictable. If we are ultimately unable to obtain regulatory approval for our

product candidates, we will be unable to recognize product revenue and our business will be substantially harmed.

We cannot commercialize a product until the appropriate regulatory authorities have reviewed and approved the product candidate. The time required to obtain approval by the FDA and comparable foreign regulatory authorities is unpredictable, typically takes many years following the commencement of clinical studies and depends upon numerous factors, including the type and complexity of the product candidates involved. Regulatory authorities have substantial discretion in the approval process and may refuse to accept an application for review, or may decide that our data are insufficient for approval and require additional preclinical, clinical or other studies. We have not requested or obtained regulatory approval for any product candidate, and it is possible that none of our existing product candidates or any product candidates we may seek to develop in the future will ever obtain

In September 2020, the FDA accepted for Priority Review the BLA submitted by BMS for Abecma (ide-cel) as a treatment for relapsed and refractory multiple myeloma and the FDA approved this BLA in March 2021. However, obtaining one regulatory approval does not guarantee that the FDA will conclude that the information BMS may submit for additional or expanded indications for Abecma will be sufficient to support approval and BMS may fail to obtain additional regulatory approvals in the United States for Abecma. Additionally, certain factors beyond our and BMS' control may impact the timeliness of the regulatory reviews of our submissions or any applications for approval.

If our product candidates are ultimately not approved for any reason, our business, prospects, results of operations and financial condition would be adversely affected.

Our ongoing clinical studies may not be completed on schedule, and our planned clinical studies may not begin on schedule, if at all. The completion or commencement of clinical studies can be delayed or prevented for a number of reasons, including, among others:

- the FDA or other regulatory bodies may not authorize us or our investigators to commence planned clinical studies, or require that we suspend ongoing clinical studies through imposition of clinical holds;
- negative results from our ongoing studies or other industry studies involving engineered cell therapy product candidates;
- delays in reaching or failing to reach agreement on acceptable terms with prospective contract research organizations, or CROs, and clinical study sites, the terms of which can be subject to considerable negotiation and may vary significantly among different CROs and study sites;
- inadequate quantity or quality of a product candidate or other materials necessary to conduct clinical studies, for example delays in the manufacturing of sufficient supply of finished drug product;
- difficulties obtaining ethics committee or IRB, approval to conduct a clinical study at a prospective site or sites;
- challenges in recruiting and enrolling subjects to participate in clinical studies, the proximity of subjects to study sites, eligibility criteria for the clinical study, the nature of the clinical study protocol, the availability of approved effective treatments for the relevant disease and competition from other clinical study programs for similar indications;
- severe or unexpected drug-related side effects experienced by subjects in a clinical study, such as severe neurotoxicity and cytokine release syndrome;
- we may decide, or regulatory authorities may require us, to conduct additional clinical studies or abandon product development programs;
- the FDA may disagree with our clinical study design and our interpretation of data from clinical studies, or may change the requirements for approval even after it has reviewed and commented on the design for our clinical studies;

- reports from preclinical or clinical testing of other competing candidates that raise safety or efficacy concerns; and
- difficulties retaining subjects who have enrolled in a clinical study but may be prone to withdraw due to rigors of the clinical studies, lack of efficacy, side effects, personal issues, or loss of interest.

Clinical studies may also be delayed or terminated as a result of ambiguous or negative interim results. In addition, a clinical study may be suspended or terminated by us, the FDA or other comparable authorities, the IRBs or ethic committees at the sites where the IRBs or ethic committees are overseeing a clinical study, a data and safety monitoring board overseeing the clinical study at issue or other regulatory authorities due to a number of factors, including, among others:

- failure to conduct the clinical study in accordance with regulatory requirements or our clinical protocols;
- inspection of the clinical study operations or study sites by the FDA or other regulatory authorities that reveals deficiencies or violations that require us to undertake corrective action, including in response to the imposition of a clinical hold;
- unforeseen safety issues, including any that could be identified in our ongoing studies, adverse side effects or lack of effectiveness;
- changes in government regulations or administrative actions;
- problems with clinical supply materials; and
- lack of adequate funding to continue clinical studies.

In addition, regulatory agencies may not approve the labeling claims that are necessary or desirable for the successful commercialization of our treatment candidates. Even if regulatory approval is secured for any of our product candidates, the terms of such approval may limit the use of any approved product, which will limit its prospects for commercialization, which could have a material and adverse effect on our business, prospects, financial condition and results of operations.

Patients receiving T cell-based immunotherapies, such as Abecma or the bb21217 product candidate may experience serious adverse events, including neurotoxicity and cytokine release syndrome. If our product or any of our product candidates are revealed to have high and unacceptable severity and/or prevalence of side effects or unexpected characteristics, its clinical development, marketing approval, and commercial potential will be negatively impacted, which will significantly harm our business, financial condition and prospects.

Abecma and the bb21217 product candidate are chimeric antigen receptor, or CAR, T cell-based immunotherapies. In previous and ongoing clinical studies involving CAR T cell products, including those involving ide-cel and the bb21217 product candidate, patients experienced side effects such as neurotoxicity and cytokine release syndrome. There have been life-threatening events related to severe neurotoxicity and cytokine release syndrome, requiring intense medical intervention such as intubation or pressor support, and in several cases, resulted in death. Severe neurotoxicity is a condition that is currently defined clinically by cerebral edema, confusion, drowsiness, speech impairment, tremors, seizures, or other central nervous system side effects, when such side effects are serious enough to lead to intensive care. In some cases, severe neurotoxicity was thought to be associated with the use of certain lymphodepletion regimens used prior to the administration of the CAR T cell products. Cytokine release syndrome is a condition that is currently defined clinically by certain symptoms related to the release of cytokines, which can include fever, chills, low blood pressure, when such side effects are serious enough to lead to intensive care with mechanical ventilation or significant vasopressor support. The exact cause or causes of cytokine release syndrome and severe neurotoxicity in connection with treatment of CAR T cell products is not fully understood at this time. In addition, patients have experienced other adverse events in these studies, such as a reduction in the number of blood cells (in the form of neutropenia, thrombocytopenia, anemia or other cytopenias), febrile neutropenia, chemical laboratory abnormalities (including elevated liver enzymes), and renal failure.

Undesirable side effects caused by Abecma or the bb21217 product candidate, other CAR T product candidates targeting BCMA, or our other engineered cell therapy product candidates, could cause us or regulatory authorities to interrupt, delay or halt clinical studies and could result in a more restrictive label or the delay or denial of marketing approval by the FDA or other comparable foreign regulatory authorities. In some cases, side effects such as neurotoxicity or cytokine release syndrome have resulted in clinical holds of ongoing clinical trials and/or discontinuation of the development of the product candidate. Results of our studies could reveal a high and unacceptable severity and prevalence of side effects or unexpected characteristics. Treatment-related side effects could also affect patient recruitment or the ability of enrolled patients to complete the studies or result in potential product liability claims. In addition, these side effects may not be appropriately recognized or managed by the treating medical staff, as toxicities resulting from engineered cell therapies are not normally encountered in the general patient population and by medical personnel. Medical personnel may need additional training regarding engineered cell therapies to understand their side effects. Inadequate training in recognizing or failure to effectively manage the potential side effects of engineered cell therapies could result in patient deaths. Any of these occurrences may harm our business, financial condition and prospects significantly.

Negative public opinion and increased regulatory scrutiny of gene therapy and genetic research may damage public perception of our product and any future products or adversely affect our ability to conduct our business or obtain and maintain marketing approvals for our product and product candidates.

Public perception may be influenced by claims that gene therapy, including gene editing technologies, is unsafe or unethical, and research activities and adverse events in the field, even if not ultimately attributable to us or our product or product candidates, could result in increased governmental regulation, unfavorable public perception, challenges in recruiting patients to participate in our clinical studies, potential regulatory delays in the testing or approval of our potential products, stricter labeling requirements for those product candidates that are approved, and a decrease in demand for any such product. More restrictive government regulations or negative public opinion would have a negative effect on our business or financial condition and may delay or impair the development and commercialization of our product candidates or demand for any approved products.

Changes in regulatory requirements, FDA guidance or unanticipated events during our preclinical studies and clinical studies of our product candidates may occur, which may result in changes to preclinical or clinical study protocols or additional preclinical or clinical study requirements, which could result in increased costs to us and could delay our development timeline.

Changes in regulatory requirements, FDA guidance or unanticipated events during our preclinical studies and clinical studies may force us to amend preclinical studies and clinical study protocols or the FDA may impose additional preclinical studies and clinical study requirements. Amendments or changes to our clinical study protocols would require resubmission to the FDA and IRBs for review and approval, which may increase the cost or delay the timing or successful completion of clinical studies. Similarly, amendments to our preclinical studies may increase the cost or delay the timing or successful completion of those preclinical studies. If we experience delays completing, or if we terminate, any of our preclinical or clinical studies, or if we are required to conduct additional preclinical or clinical studies, the commercial prospects for our product candidates may be harmed and our ability to recognize product revenue will be delayed.

Obtaining and maintaining regulatory approval of our product candidates in one jurisdiction does not mean that we will be successful in obtaining regulatory approval of our product candidates in other jurisdictions.

In order to market any product outside of the United States, we must establish and comply with the numerous and varying safety, efficacy and other regulatory requirements of other countries. Obtaining and maintaining regulatory approval of our product candidates in one jurisdiction does not guarantee that we will be able to obtain or maintain regulatory approval in any other jurisdiction, but a failure or delay in obtaining regulatory approval in one jurisdiction may have a negative effect on the regulatory approval process in others. For example, even if the FDA or other comparable foreign regulatory authority grants marketing approval of a product candidate, comparable regulatory authorities in foreign jurisdictions must also approve the manufacturing, marketing and promotion of the product candidate in those countries. Approval procedures vary among jurisdictions and can involve requirements and administrative review periods different from those in the United States, including additional preclinical or

clinical studies, as studies conducted in one jurisdiction may not be accepted by regulatory authorities in other jurisdictions. The marketing approval processes in other countries may implicate all of the risks detailed above regarding FDA approval in the United States, as well as other risks. In many jurisdictions outside the United States, a product candidate must be approved for reimbursement before it can be approved for sale in that jurisdiction. In some cases, the price that we intend to charge for our product candidates is also subject to approval.

Obtaining foreign regulatory approvals and compliance with foreign regulatory requirements could result in significant delays, difficulties and costs for us and could delay or prevent the introduction of our products in certain countries. Failure to obtain marketing approval in other countries or any delay or other setback in obtaining such approval would impair our ability to market our product candidates in such countries. Any such impairment would reduce the size of our potential market, which could have a material adverse impact on our business, prospects, financial condition and results of operations.

We may not be successful in our efforts to identify or discover additional product candidates.

The success of our business depends primarily upon our ability to identify, develop and commercialize products based on our engineered cell therapy technologies. Our research programs in oncology may fail to identify other potential product candidates for clinical development for a number of reasons. We may be unsuccessful in identifying potential product candidates or our potential product candidates may be shown to have harmful side effects or may have other characteristics that may make the products unmarketable or unlikely to receive marketing approval. Research programs to identify new product candidates require substantial technical, financial and human resources. We may focus our efforts and resources on potential programs or product candidates that ultimately prove to be unsuccessful. If any of these events occur, we may be forced to abandon our research, development or commercialization efforts for a program or programs, which would have a material adverse effect on our business and could potentially cause us to cease operations.

Risks Related to Our Reliance on Third Parties

We are dependent on BMS for the successful development and commercialization of Abecma and bb21217. If BMS does not devote sufficient resources to the commercialization and further development of Abecma and the development of bb21217, is unsuccessful in its efforts, or chooses to terminate its agreements with us, our business will be materially harmed.

We are co-developing and co-promoting ide-cel, being marketed as Abecma in the United States, with BMS under our amended and restated co-development and co-promotion agreement with BMS, or the Ide-cel CCPS. Under the Ide-cel CCPS, we and BMS share the obligation to develop and commercialize ide-cel in the United States, and we will be solely dependent on BMS to develop and commercialize ide-cel outside of the United States. In addition, we have exclusively licensed to BMS the right to develop and commercialize the bb21217 product candidate, and we retain an option to co-develop and co-promote bb21217 in the United States under our license agreement with BMS. With respect to bb21217, we are responsible for completing the ongoing CRB-402 study, but BMS is responsible for further clinical development and commercialization costs, unless we choose to exercise our option to co-develop and co-promote bb21217 in the United States. If we exercise our option to co-develop and co-promote bb21217 in the United States, we and BMS will share the obligation to develop and commercialize bb21217 in the United States, and we will be solely dependent on BMS to develop and commercialize bb21217 outside of the United States.

In our partnership with BMS, BMS is obligated to use commercially reasonable efforts to develop and commercialize ide-cel and bb21217. BMS may determine however, that it is commercially reasonable to de-prioritize or discontinue the development of ide-cel and bb21217. These decisions may occur for many reasons, including internal business reasons (including due to the existence of other BMS programs that are potentially competitive with ide-cel and bb21217), results from clinical trials or because of unfavorable regulatory feedback. Further, on review of the safety and efficacy data, the FDA may impose requirements on one or both of the programs that render them commercially nonviable. In addition, under our agreements with BMS, BMS has certain decision-making rights in determining the development and commercialization plans and activities for the programs. We may disagree with BMS about the development strategy it employs, but we will have limited rights to impose

our development strategy on BMS. Similarly, BMS may decide to seek marketing approval for, and limit commercialization of, ide-cel or bb21217 to narrower indications than we would pursue. More broadly, if BMS elects to discontinue the development of ide-cel or bb21217, we may be unable to advance the product candidate ourselves.

This partnership may not be scientifically or commercially successful for us due to a number of important factors, including the following:

- BMS has wide discretion in determining the efforts and resources that it will apply to its partnership with us. The timing and amount of any development milestones, and downstream commercial profits, milestones and royalties that we may receive under such partnership will depend on, among other things, BMS's efforts, allocation of resources and successful development and commercialization of ide-cel, bb21217 and other product candidates that are the subject of its collaboration with us.
- BMS may develop and commercialize, either alone or with others, products that are similar to or competitive with ide-cel, bb21217 and other product candidates that are the subject of its collaboration with us. For example, BMS is currently commercializing a number of its existing products, including lenalidomide and pomalidomide, for certain patients with relapsed and refractory multiple myeloma , as well as a CAR-T product candidate targeting BCMA.
- BMS may terminate its partnership with us without cause and for circumstances outside of our control, which could make it difficult for us to attract new strategic partners or adversely affect how we are perceived in scientific and financial communities.
- BMS may develop or commercialize our product candidates in such a way as to elicit litigation that could jeopardize or invalidate our intellectual property rights or expose us to potential liability.
- BMS may not comply with all applicable regulatory requirements, or may fail to report safety data in accordance with all applicable regulatory requirements.
- If BMS were to breach its arrangements with us, we may need to enforce our right to terminate the agreement in legal proceedings, which could be costly and cause delay in our ability to receive rights back to the relevant product candidates. If we were to terminate an agreement with BMS due to BMS's breach or BMS terminated the agreement without cause, the development and commercialization of ide-cel or bb21217 product candidates that are the subject of its collaboration with us could be delayed, curtailed or terminated because we may not have sufficient financial resources or capabilities to continue development and commercialization of these product candidates on our own if we choose not to, or are unable to, enter into a new collaboration for these product candidates.

BMS may enter into one or more transactions with third parties, including a merger, consolidation, reorganization, sale of substantial assets, sale of substantial stock or other change in control, which could divert the attention of its management and adversely affect BMS's ability to retain and motivate key personnel who are important to the continued development of the programs under the strategic partnership with us. In addition, the third-party to any such transaction could determine to re-prioritize BMS's development programs such that BMS ceases to diligently pursue the development of our programs and/or cause the respective collaboration with us to terminate.

We expect to rely on third parties to conduct, supervise and monitor our clinical studies, and if these third parties perform in an unsatisfactory manner, it may harm our business.

We expect to rely on CROs and clinical study sites to ensure our clinical studies are conducted properly and on time. While we will have agreements governing their activities, we will have limited influence over their actual performance. We will control only certain aspects of our CROs' activities. Nevertheless, we will be responsible for ensuring that each of our clinical studies is conducted in accordance with the applicable protocol, legal, regulatory and scientific standards, and our reliance on the CROs does not relieve us of our regulatory responsibilities.

We and our CROs are required to comply with the FDA's and other regulatory authorities' GCPs for conducting, recording and reporting the results of clinical studies to assure that the data and reported results are credible and accurate and that the rights, integrity and confidentiality of clinical study participants are protected. If we or our CROs fail to comply with applicable GCPs, the clinical data generated in our future clinical studies may be deemed unreliable and the FDA and other regulatory authorities may require us to perform additional clinical studies before approving any marketing applications.

If our CROs do not successfully carry out their contractual duties or obligations, fail to meet expected deadlines, or if the quality or accuracy of the clinical data they obtain is compromised due to the failure to adhere to our clinical protocols or regulatory requirements, or for any other reasons, our clinical studies may be extended, delayed or terminated, and we may not be able to obtain marketing approval for, or successfully commercialize our product candidates. As a result, our financial results and the commercial prospects for our product candidates would be harmed, our costs could increase, and our ability to recognize revenues could be delayed.

We rely on third parties to conduct some or all aspects of our lentiviral vector production, drug product manufacturing, and testing, and these third parties may not perform satisfactorily.

We do not independently conduct all aspects of our lentiviral vector production, drug product manufacturing, and testing. We currently rely, and expect to continue to rely, on third parties with respect to these items, including manufacturing and testing in the commercial context.

Our reliance on these third parties for manufacturing, testing, research and development activities reduce our control over these activities but will not relieve us of our responsibility to ensure compliance with all required regulations and study protocols. For example, for products that we develop and commercialize on our own, we will remain responsible for ensuring that each of our IND-enabling studies and clinical studies are conducted in accordance with the study plan and protocols, and that our lentiviral vectors and drug products are manufactured in accordance with GMP as applied in the relevant jurisdictions.

If these third parties do not successfully carry out their contractual duties, meet expected deadlines, conduct our studies in accordance with regulatory requirements or our stated study plans and protocols, or manufacture our lentiviral vectors and drug products in accordance with GMP, whether due to the impacts of COVID-19 or otherwise, we will not be able to complete, or may be delayed in completing, the preclinical and clinical studies and manufacturing process validation activities required to support future IND, MAA and BLA submissions and approval of our product candidates, or to support commercialization of our products, if approved. Many of our agreements with these third parties contain termination provisions that allow these third parties to terminate their relationships with us at any time. If we need to enter into alternative arrangements, our product development and commercialization activities could be delayed.

Reliance on third-party manufacturers entails risks to which we would not be subject if we manufactured the products ourselves, including:

- the inability to negotiate manufacturing agreements with third parties under commercially reasonable terms;
- reduced control as a result of using third-party manufacturers for all aspects of manufacturing activities;
- the risk that these activities are not conducted in accordance with our study plans and protocols;
- termination or nonrenewal of manufacturing agreements with third parties in a manner or at a time that is costly or damaging to us; and
- disruptions to the operations of our third-party manufacturers or suppliers caused by conditions unrelated to our business or operations, including the bankruptcy of the manufacturer or supplier.

We may be forced to manufacture lentiviral vector and drug product ourselves, for which we may not have the capabilities or resources, or enter into an agreement with a different manufacturer, which we may not be able to do on reasonable terms, if at all. In some cases, the technical skills required to manufacture our lentiviral vector or drug

product candidates may be unique or proprietary to the original manufacturer, and we may have difficulty or there may be contractual restrictions prohibiting us from, transferring such skills to a back-up or alternate supplier, or we may be unable to transfer such skills at all. Any of these events could lead to clinical study delays or failure to obtain marketing approval, or impact our ability to successfully commercialize our product or any future products. Some of these events could be the basis for FDA action, including injunction, recall, seizure or total or partial suspension of production. In addition, if we are required to change third-party manufacturers for any reason, we will be required to verify that the new manufacturer maintains facilities and procedures that comply with quality standards and with all applicable regulations. We will also need to verify, such as through a manufacturing comparability study, that any new manufacturing process will produce our product candidate according to the specifications previously submitted to the FDA or another regulatory authority. The delays associated with the verification of a new third-party manufacturer could negatively affect our ability to develop product candidates or commercialize our products in a timely manner or within budget. In addition, changes in manufacturers often involve changes in manufacturing procedures and processes, which could require that we conduct bridging studies between our prior clinical supply used in our clinical trials and that of any new manufacturer. We may be unsuccessful in demonstrating the comparability of clinical supplies which could require the conduct of additional clinical trials.

We and our contract manufacturers are subject to significant regulation with respect to manufacturing our product and product candidates. The manufacturing facilities on which we rely may not continue to meet regulatory requirements and have limited capacity.

All entities involved in the preparation of therapeutics for clinical studies or commercial sale, including our existing contract manufacturers for our product and product candidates, are subject to extensive regulation. Some components of a finished therapeutic product approved for commercial sale or used in late-stage clinical studies must be manufactured in accordance with GMP. These regulations govern manufacturing processes and procedures (including record keeping) and the implementation and operation of quality systems to control and assure the quality of investigational products and products approved for sale. Poor control of production processes can lead to the introduction of adventitious agents or other contaminants, or to inadvertent changes in the properties or stability of our product and product candidates that may not be detectable in final product testing. We or our contract manufacturers must supply all necessary documentation in support of a BLA or MAA on a timely basis and where required, must adhere to the FDA's or other regulator's good laboratory practices, or GLP, and GMP regulations enforced by the FDA or other regulator through facilities inspection programs. Some of our contract manufacturers have not produced a commercially-approved product and therefore have not obtained the requisite FDA or other marketing approvals to do so. Our facilities and quality systems and the facilities and quality systems of some or all of our third-party contractors must pass a pre-approval inspection for compliance with the applicable regulations as a condition of marketing approval of our product and potential products. In addition, the regulatory authorities may, at any time, audit or inspect a manufacturing facility involved with the preparation of our products or the associated quality systems for compliance with the regulations applicable to the activities being conducted. If these facilities do not pass a pre-approval plant inspection, FDA or other marketing approval of the products will not be granted.

The regulatory authorities also may, at any time following approval of a product for sale, audit the manufacturing facilities of our third-party contractors. If any such inspection or audit identifies a failure to comply with applicable regulations or if a violation of our product specifications or applicable regulations occurs independent of such an inspection or audit, we or the relevant regulatory authority may require remedial measures that may be costly and/or time-consuming for us or a third party to implement and that may include the temporary or permanent suspension of a clinical study or commercial sales or the temporary or permanent closure of a facility. Any such remedial measures imposed upon us or third parties with whom we contract could materially harm our business.

If we or any of our third-party manufacturers fail to maintain regulatory compliance, the FDA or other regulators can impose regulatory sanctions including, among other things, refusal to approve a pending application for a biologic product, or revocation of a pre-existing approval. As a result, our business, financial condition and results of operations may be materially harmed.

Additionally, if supply from one approved manufacturer is interrupted, there could be a significant disruption in commercial supply. The number of manufacturers with the necessary manufacturing capabilities is limited. In

addition, an alternative manufacturer would need to be qualified through a BLA supplement or similar regulatory submission which could result in further delay. The regulatory agencies may also require additional studies if a new manufacturer is relied upon for commercial production. Switching manufacturers may involve substantial costs and is likely to result in a delay in our desired clinical and commercial timelines.

These factors could cause the delay of clinical studies, regulatory submissions, required approvals or commercialization of our product and any future products, cause us to incur higher costs and prevent us from commercializing our products successfully. Furthermore, if our suppliers fail to meet contractual requirements, and we are unable to secure one or more replacement suppliers capable of production at a substantially equivalent cost, our clinical studies may be delayed or we could lose potential revenues.

Our reliance on third parties requires us to share our trade secrets, which increases the possibility that a competitor will discover them or that our trade secrets will be misappropriated or disclosed.

Because we rely on third parties to manufacture our vectors and our drug products, and because we collaborate with various organizations and academic institutions on the advancement of our engineered cell therapy technologies, we must, at times, share trade secrets with them. We seek to protect our proprietary technology in part by entering into confidentiality agreements and, if applicable, material transfer agreements, collaborative research agreements, consulting agreements or other similar agreements with our collaborators, advisors, employees and consultants prior to beginning research or disclosing proprietary information. These agreements typically limit the rights of the third parties to use or disclose our confidential information, such as trade secrets. Despite the contractual provisions employed when working with third parties, the need to share trade secrets and other confidential information increases the risk that such trade secrets become known by our competitors, are inadvertently incorporated into the technology of others, or are disclosed or used in violation of these agreements. Given that our proprietary position is based, in part, on our know-how and trade secrets, a competitor's discovery of our trade secrets or other unauthorized use or disclosure would impair our competitive position and may have a material adverse effect on our business.

In addition, these agreements typically restrict the ability of our collaborators, advisors, employees and consultants to publish data potentially relating to our trade secrets. Our academic collaborators typically have rights to publish data, provided that we are notified in advance and may delay publication for a specified time in order to secure our intellectual property rights arising from the collaboration. In other cases, publication rights are controlled exclusively by us, although in some cases we may share these rights with other parties. We also conduct joint research and development programs that may require us to share trade secrets under the terms of our research and development partnerships or similar agreements. Despite our efforts to protect our trade secrets, our competitors may discover our trade secrets, either through breach of these agreements, independent development or publication of information including our trade secrets in cases where we do not have proprietary or otherwise protected rights at the time of publication. A competitor's discovery of our trade secrets would impair our competitive position and have an adverse impact on our business.

Any collaboration or license arrangements that we may enter into in the future may not be successful, which could impede our ability to develop and commercialize our product candidates.

We may seek collaboration or license arrangements for the commercialization, or potentially for the development, of certain of our product candidates depending on the merits of retaining commercialization rights for ourselves as compared to entering into collaboration or license arrangements. We will face, to the extent that we decide to enter into such arrangements, significant competition in seeking appropriate partners. Moreover, collaboration and license arrangements are complex and time-consuming to negotiate, document, implement and maintain. We may not be successful in our efforts to establish and implement such arrangements should we so chose to enter into them. The terms of any collaborations, licenses or other arrangements that we may establish may not be favorable to us.

Any future collaboration or license arrangements that we enter into may not be successful. The success of such arrangements will depend heavily on the efforts and activities of our partners. Collaboration and license arrangements are subject to numerous risks, which may include risks that:

- partners have significant discretion in determining the efforts and resources that they will apply to collaborations;
- a partner with marketing, manufacturing and distribution rights to one or more products may not commit sufficient resources to or otherwise not perform satisfactorily in carrying out these activities;
- partners may not properly maintain or defend our intellectual property rights or may use our intellectual property or proprietary information in a way that gives rise to actual or threatened litigation that could jeopardize or invalidate our intellectual property or proprietary information or expose us to potential liability;
- collaboration and license arrangements may be terminated, and, if terminated, this may result in a need for additional capital to pursue further development or commercialization of the applicable current or future product candidates;
- partners may own or co-own intellectual property covering products that results from our collaborating with them, and in such cases, we would not have the exclusive right to develop or commercialize such intellectual property;
- disputes may arise with respect to the ownership of any intellectual property developed pursuant to our collaboration or license arrangements; and
- a partner's sales and marketing activities or other operations may not be in compliance with applicable laws resulting in civil or criminal proceedings.

Risks Related to Our Intellectual Property Rights

If we are unable to obtain or protect intellectual property rights related to our product candidates, we may not be able to compete effectively in our markets.

We rely upon a combination of patents, trade secret protection and confidentiality agreements to protect the intellectual property related to our product candidates. The strength of patents in the biotechnology and pharmaceutical field involves complex legal and scientific questions and can be uncertain. The patent applications that we own or in-license may fail to result in issued patents with claims that cover our product candidates in the United States or in other foreign countries. There is no assurance that all of the potentially relevant prior art relating to our patents and patent applications has been found, which can invalidate a patent or prevent a patent from issuing from a pending patent application. Even if patents do successfully issue and even if such patents cover our product candidates, third parties may challenge their validity, enforceability or scope, which may result in such patents being narrowed or invalidated. Furthermore, even if they are unchallenged, our patents and patent applications may not adequately protect our intellectual property, provide exclusivity for our product candidates or prevent others from designing around our claims. Any of these outcomes could impair our ability to prevent competition from third parties, which may have an adverse impact on our business.

If the patent applications we hold or have in-licensed with respect to our programs or product candidates fail to issue, if their breadth or strength of protection is threatened, or if they fail to provide meaningful exclusivity for our product candidates, it could dissuade companies from collaborating with us to develop product candidates, and threaten our ability to commercialize, future products. Several patent applications covering our product candidates have been filed recently. We cannot offer any assurances about which, if any, patents will issue, the breadth of any such patent or whether any issued patents will be found invalid and unenforceable or will be threatened by third parties. Any successful opposition to these patents or any other patents owned by or licensed to us could deprive us of rights necessary for the successful commercialization of any product candidates that we may develop. Further, if we encounter delays in regulatory approvals, the period of time during which we could market a product candidate

under patent protection could be reduced. Since patent applications in the United States and most other countries are confidential for a period of time after filing, and some remain so until issued, we cannot be certain that we were the first to file any patent application related to a product candidate. Furthermore, if third parties have filed such patent applications, an interference proceeding in the United States can be initiated by a third-party to determine who was the first to invent any of the subject matter covered by the patent claims of our applications. In addition, patents have a limited lifespan. In the United States, the natural expiration of a patent is generally 20 years after it is filed. Various extensions may be available however the life of a patent, and the protection it affords, is limited. Even if patents covering our product candidates are obtained, once the patent life has expired for a product, we may be open to competition from generic medications.

In addition to the protection afforded by patents, we rely on trade secret protection and confidentiality agreements to protect proprietary know-how that is not patentable or that we elect not to patent, processes for which patents are difficult to enforce and any other elements of our product candidate discovery and development processes that involve proprietary know-how, and information or technology that is not covered by patents. However, trade secrets can be difficult to protect. We seek to protect our proprietary technology and processes, in part, by entering into confidentiality agreements with our employees, consultants, scientific advisors and contractors. We also seek to preserve the integrity and confidentiality of our data and trade secrets by maintaining physical security of our premises and physical and electronic security of our information technology systems. While we have confidence in these individuals, organizations and systems, agreements or security measures may be breached, and we may not have adequate remedies for any breach. In addition, our trade secrets may otherwise become known or be independently discovered by competitors.

Although we expect all of our employees and consultants to assign their inventions to us, and all of our employees, consultants, advisors and any third parties who have access to our proprietary know-how, information or technology to enter into confidentiality agreements, we cannot provide any assurances that all such agreements have been duly executed or that our trade secrets and other confidential proprietary information will not be disclosed or that competitors will not otherwise gain access to our trade secrets or independently develop substantially equivalent information and techniques. Misappropriation or unauthorized disclosure of our trade secrets could impair our competitive position and may have a material adverse effect on our business. Additionally, if the steps taken to maintain our trade secrets are deemed inadequate, we may have insufficient recourse against third parties for misappropriating the trade secret. In addition, others may independently discover our trade secrets and proprietary information. For example, the FDA, as part of its Transparency Initiative, is currently considering whether to make additional information publicly available on a routine basis, including information that we may consider to be trade secrets or other proprietary information, and it is not clear at the present time how the FDA's disclosure policies may change in the future, if at all.

Further, the laws of some foreign countries do not protect proprietary rights to the same extent or in the same manner as the laws of the United States. As a result, we may encounter significant problems in protecting and defending our intellectual property both in the United States and abroad. If we are unable to prevent material disclosure of the non-patented intellectual property related to our technologies to third parties, and there is no guarantee that we will have any such enforceable trade secret protection, we may not be able to establish or maintain a competitive advantage in our market, which could materially adversely affect our business, results of operations and financial condition.

Third-party claims of intellectual property infringement may prevent or delay our development and commercialization efforts.

Our commercial success depends in part on our avoiding infringement of the patents and proprietary rights of third parties. There is a substantial amount of litigation, both within and outside the United States, involving patent and other intellectual property rights in the biotechnology and pharmaceutical industries, including patent infringement lawsuits, interferences, oppositions, ex parte reexaminations, post-grant review, and inter partes review proceedings before the U.S. Patent and Trademark Office, or U.S. PTO, and corresponding foreign patent offices. Numerous U.S. and foreign issued patents and pending patent applications, which are owned by third parties, exist in the fields in which we are pursuing development candidates. As the biotechnology and pharmaceutical industries

expand and more patents are issued, the risk increases that our product candidates may be subject to claims of infringement of the patent rights of third parties.

Third parties may assert that we are employing their proprietary technology without authorization. There may be third-party patents or patent applications with claims to materials, formulations, methods of manufacture or methods for treatment related to the use or manufacture of our product candidates. Because patent applications can take many years to issue, there may be currently pending patent applications which may later result in issued patents that our product candidates may infringe. In addition, third parties may obtain patents in the future and claim that use of our technologies infringes upon these patents. If any third-party patents were held by a court of competent jurisdiction to cover the manufacturing process of any of our product candidates, any molecules formed during the manufacturing process or any final product itself, the holders of any such patents may be able to block our ability to commercialize such product candidate unless we obtained a license under the applicable patents, or until such patents expire. Similarly, if any third-party patents were held by a court of competent jurisdiction to cover aspects of our formulations, processes for manufacture or methods of use, including combination therapy, the holders of any such patents may be able to block our ability to develop and commercialize the applicable product candidate unless we obtained a license or until such patent expires. In either case, such a license may not be available on commercially reasonable terms or at all.

Parties making claims against us may obtain injunctive or other equitable relief, which could effectively block our ability to further develop and commercialize one or more of our product candidates. Defense of these claims, regardless of their merit, would involve substantial litigation expense and would be a substantial diversion of employee resources from our business. In the event of a successful claim of infringement against us, we may have to pay substantial damages, including treble damages and attorneys' fees for willful infringement, pay royalties, redesign our infringing products or obtain one or more licenses from third parties, which may be impossible or require substantial time and monetary expenditure.

We may not be successful in obtaining or maintaining necessary rights to gene therapy product components and processes for our development pipeline through acquisitions and in-licenses.

Presently we have rights to the intellectual property, through licenses from third parties and under patents that we own, to develop our product candidates and commercialize our approved product. Because our programs may involve additional product candidates that may require the use of proprietary rights held by third parties, the growth of our business will likely depend in part on our ability to acquire, in-license or use these proprietary rights. In addition, our product candidates may require specific formulations to work effectively and efficiently and these rights may be held by others. We may be unable to acquire or in-license any compositions, methods of use, processes or other third-party intellectual property rights from third parties that we identify. The licensing and acquisition of third-party intellectual property rights is a competitive area, and a number of more established companies are also pursuing strategies to license or acquire third-party intellectual property rights that we may consider attractive. These established companies may have a competitive advantage over us due to their size, cash resources and greater clinical development and commercialization capabilities.

For example, we sometimes collaborate with U.S. and foreign academic institutions to accelerate our preclinical research or development under written agreements with these institutions. Typically, these institutions provide us with an option to negotiate a license to any of the institution's rights in technology resulting from the collaboration. Regardless of such right of first negotiation for intellectual property, we may be unable to negotiate a license within the specified time frame or under terms that are acceptable to us. If we are unable to do so, the institution may offer the intellectual property rights to other parties, potentially blocking our ability to pursue our program.

In addition, companies that perceive us to be a competitor may be unwilling to assign or license rights to us. We also may be unable to license or acquire third-party intellectual property rights on terms that would allow us to make an appropriate return on our investment. If we are unable to successfully obtain rights to required third-party intellectual property rights, our business, financial condition and prospects for growth could suffer.

If we fail to comply with our obligations in the agreements under which we license intellectual property rights from third parties or otherwise experience disruptions to our business relationships with our licensors, we could lose license rights that are important to our business.

We are a party to a number of intellectual property license agreements that are important to our business and expect to enter into additional license agreements in the future. Our existing license agreements impose, and we expect that future license agreements will impose, various diligence, milestone payment, royalty and other obligations on us. If we fail to comply with our obligations under these agreements, or we are subject to a bankruptcy, the licensor may have the right to terminate the license, in which event we would not be able to market products covered by the license.

We may need to obtain licenses from third parties to advance the development of our product candidates or allow commercialization of our approved product, and we have done so from time to time. We may fail to obtain any of these licenses at a reasonable cost or on reasonable terms, if at all. In that event, we may be required to expend significant time and resources to develop or license replacement technology. If we are unable to do so, we may be unable to develop or commercialize the affected product candidates, which could harm our business significantly. We cannot provide any assurances that third-party patents do not exist which might be enforced against our current product candidates, approved product, or future products, resulting in either an injunction prohibiting our sales, or, with respect to our sales, an obligation on our part to pay royalties and/or other forms of compensation to third parties.

In many cases, patent prosecution of our licensed technology is controlled solely by the licensor. If our licensors fail to obtain and maintain patent or other protection for the proprietary intellectual property we license from them, we could lose our rights to the intellectual property or our exclusivity with respect to those rights, and our competitors could market competing products using the intellectual property. In certain cases, we control the prosecution of patents resulting from licensed technology. In the event we breach any of our obligations related to such prosecution, we may incur significant liability to our licensing partners. Licensing of intellectual property is of critical importance to our business and involves complex legal, business and scientific issues and is complicated by the rapid pace of scientific discovery in our industry. Disputes may arise regarding intellectual property subject to a licensing agreement, including:

- the scope of rights granted under the license agreement and other interpretation-related issues;
- the extent to which our technology and processes infringe on intellectual property of the licensor that is not subject to the licensing agreement;
- the sublicensing of patent and other rights under our collaborative development relationships;
- our diligence obligations under the license agreement and what activities satisfy those diligence obligations;
- the ownership of inventions and know-how resulting from the joint creation or use of intellectual property by our licensors and us and our partners; and
- the priority of invention of patented technology.

If disputes over intellectual property that we have licensed prevent or impair our ability to maintain our current licensing arrangements on acceptable terms, we may be unable to successfully develop and commercialize the affected approved product or product candidates.

We may be involved in lawsuits to protect or enforce our patents or the patents of our licensors, which could be expensive, time-consuming and unsuccessful.

Competitors may infringe our patents or the patents of our licensors. To counter infringement or unauthorized use, we may be required to file infringement claims, which can be expensive and time-consuming. In addition, in an infringement proceeding, a court may decide that a patent of ours or our licensors is not valid, is unenforceable and/or is not infringed, or may refuse to stop the other party from using the technology at issue on the grounds that our patents do not cover the technology in question. In patent litigation in the United States, defendant counterclaims

alleging invalidity and/or unenforceability are commonplace. Grounds for a validity challenge could be an alleged failure to meet any of several statutory requirements, including patent eligible subject matter, lack of novelty, obviousness or non-enablement. Grounds for an unenforceability assertion could be an allegation that someone connected with prosecution of the patent withheld relevant information from the U.S. PTO, or made a misleading statement, during prosecution. Third parties may also raise similar claims before administrative bodies in the United States or abroad, even outside the context of litigation. Such mechanisms include re-examination, post grant review, and equivalent proceedings in foreign jurisdictions (e.g., opposition proceedings). Such proceedings could result in revocation or amendment to our patents in such a way that they no longer cover our product candidates. The outcome following legal assertions of invalidity and unenforceability is unpredictable. With respect to the validity question, for example, we cannot be certain that there is no invalidating prior art, of which we and the patent examiner were unaware during prosecution. If a defendant were to prevail on a legal assertion of invalidity and/or unenforceability, we would lose at least part, and perhaps all, of the patent protection on our approved product and/or product candidates. Such a loss of patent protection would have a material adverse impact on our business.

Interference proceedings provoked by third parties or brought by us may be necessary to determine the priority of inventions with respect to our patents or patent applications or those of our licensors. An unfavorable outcome could require us to cease using the related technology or to attempt to license rights to it from the prevailing party. Our business could be harmed if the prevailing party does not offer us a license on commercially reasonable terms. Our defense of litigation or interference proceedings may fail and, even if successful, may result in substantial costs and distract our management and other employees. We may not be able to prevent, alone or with our licensors, misappropriation of our intellectual property rights, particularly in countries where the laws may not protect those rights as fully as in the United States.

Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation. There could also be public announcements of the results of hearings, motions or other interim proceedings or developments. If securities analysts or investors perceive these results to be negative, it could have a material adverse effect on the price of our common stock.

We may be subject to claims that our employees, consultants or independent contractors have wrongfully used or disclosed confidential information of third parties or that our employees have wrongfully used or disclosed alleged trade secrets of their former employers.

We employ individuals who were previously employed at universities or other biotechnology or pharmaceutical companies, including our competitors or potential competitors. Although we try to ensure that our employees, consultants and independent contractors do not use the proprietary information or know-how of others in their work for us, we may be subject to claims that we or our employees, consultants or independent contractors have inadvertently or otherwise used or disclosed intellectual property, including trade secrets or other proprietary information, of any of our employee's former employer or other third parties. Litigation may be necessary to defend against these claims. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel, which could adversely impact our business. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to management and other employees.

We may be subject to claims challenging the inventorship or ownership of our patents and other intellectual property.

We may also be subject to claims that former employees, collaborators or other third parties have an ownership interest in our patents or other intellectual property. We have had in the past, and we may also have in the future, ownership disputes arising, for example, from conflicting obligations of consultants or others who are involved in developing our product candidates. Litigation may be necessary to defend against these and other claims challenging inventorship or ownership. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights, such as exclusive ownership of, or right to use, valuable intellectual property. Such an outcome could have a material adverse effect on our business. Even if we are successful in

defending against such claims, litigation could result in substantial costs and be a distraction to management and other employees.

Obtaining and maintaining our patent protection depends on compliance with various procedural, document submission, fee payment and other requirements imposed by governmental patent agencies, and our patent protection could be reduced or eliminated for non-compliance with these requirements.

Periodic maintenance fees, renewal fees, annuity fees and various other governmental fees on patents and/or applications will be due to be paid to the U.S. PTO and various governmental patent agencies outside of the United States in several stages over the lifetime of the patents and/or applications. We have systems in place to remind us to pay these fees, and we employ an outside firm and rely on our outside counsel to pay these fees due to non-U.S. patent agencies. The U.S. PTO and various non-U.S. governmental patent agencies require compliance with a number of procedural, documentary, fee payment and other similar provisions during the patent application process. We employ reputable law firms and other professionals to help us comply, and in many cases, an inadvertent lapse can be cured by payment of a late fee or by other means in accordance with the applicable rules. However, there are situations in which non-compliance can result in abandonment or lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. In such an event, our competitors might be able to enter the market and this circumstance would have a material adverse effect on our business.

Changes in U.S. patent law could diminish the value of patents in general, thereby impairing our ability to protect our products.

As is the case with other biotechnology companies, our success is heavily dependent on intellectual property, particularly patents. Obtaining and enforcing patents in the biotechnology industry involve both technological and legal complexity, and is therefore costly, time-consuming and inherently uncertain. In addition, the United States has recently enacted and is currently implementing wide-ranging patent reform legislation. Recent U.S. Supreme Court rulings have narrowed the scope of patent protection available in certain circumstances and weakened the rights of patent owners in certain situations. In addition to increasing uncertainty with regard to our ability to obtain patents in the future, this combination of events has created uncertainty with respect to the value of patents, once obtained. Depending on decisions by the U.S. Congress, the federal courts, and the U.S. PTO, the laws and regulations governing patents could change in unpredictable ways that would weaken our ability to obtain new patents or to enforce our existing patents and patents that we might obtain in the future.

We may not be able to protect our intellectual property rights throughout the world.

Filing, prosecuting and defending patents on product candidates in all countries throughout the world would be prohibitively expensive, and our intellectual property rights in some countries outside the United States can be less extensive than those in the United States. In addition, the laws of some foreign countries do not protect intellectual property rights to the same extent as federal and state laws in the United States. Consequently, we may not be able to prevent third parties from practicing our inventions in all countries outside the United States, or from selling or importing products made using our inventions in and into the United States or other jurisdictions. Competitors may use our technologies in jurisdictions where we have not obtained patent protection to develop their own products and further, may export otherwise infringing products to territories where we have patent protection, but enforcement is not as strong as that in the United States. These products may compete with our products and our patents or other intellectual property rights may not be effective or sufficient to prevent them from competing.

Many companies have encountered significant problems in protecting and defending intellectual property rights in foreign jurisdictions. The legal systems of certain countries, particularly certain developing countries, do not favor the enforcement of patents, trade secrets and other intellectual property protection, particularly those relating to biotechnology products, which could make it difficult for us to stop the infringement of our patents or marketing of competing products in violation of our proprietary rights generally. Proceedings to enforce our patent rights in foreign jurisdictions could result in substantial costs and divert our efforts and attention from other aspects of our business, could put our patents at risk of being invalidated or interpreted narrowly and our patent applications at risk of not issuing and could provoke third parties to assert claims against us. We may not prevail in any lawsuits that we initiate and the damages or other remedies awarded, if any, may not be commercially meaningful. Accordingly, our

efforts to enforce our intellectual property rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we develop or license.

Risks Related to the Commercialization of Our Product Candidates

We have limited experience as a commercial company and the marketing and sale any future approved drugs may be unsuccessful or less successful than anticipated.

Although BMS has responsibility for, and is undertaking, the key commercialization activities for Abecma, to the extent we are required to participate in commercialization activities we have limited experience in doing so, and there is limited information about our ability to successfully overcome many of the risks and uncertainties encountered by companies commercializing drugs in the biopharmaceutical industry. To execute our business plan, in addition to successfully marketing and selling any future drugs for which we gain regulatory approval, we will need to successfully:

- establish and maintain our relationships with healthcare providers who will be treating the patients who may receive our drugs and any future drugs;
- obtain adequate pricing and reimbursement for any future drugs, if approved;
- gain regulatory acceptance for the development and commercialization of the drug candidates in our pipeline;
- develop and maintain successful strategic alliances; and
- manage our spending as costs and expenses increase due to clinical trials, marketing approvals, and commercialization.

If we are unsuccessful in accomplishing these objectives, we may not be able to successfully develop drug candidates, commercialize any future drugs, if approved, raise capital, expand our business or continue our operations.

We may not be successful in supporting the commercialization of Abecma.

To date, we have not recognized any revenue from commercial sales of Abecma, and we do not know when, or if, we will recognize any revenue from commercial sales of Abecma. BMS is primarily responsible for the launch and commercialization of Abecma, and there can be no guarantee that BMS will be able to launch and commercialize Abecma successfully.

We do not expect to recognize significant revenue until BMS begins to sell Abecma. Our ability to recognize revenue depends on a number of factors, including, but not limited to, BMS' ability to:

- set an acceptable price for Abecma;
- obtain commercial quantities of Abecma, at acceptable cost levels;
- establish a commercial sales force team for Abecma;
- obtain third-party coverage or adequate reimbursement for Abecma;
- achieve market acceptance of Abecma, in the medical community and with third-party payors; and
- including placement in accepted clinical guidelines for the conditions for which Abecma is intended to target.

We expect to incur significant sales and marketing costs as we and our partner BMS prepare for the commercialization of Abecma pursuant to our co-development and co-promotion agreement. Even if we expend these costs, Abecma may not be commercially successful. We may not recognize significant, or any, revenue from

Abecma. If we are unable to recognize product revenue, we may be unable to continue operations without additional funding, which may be dilutive to our stockholders.

If we are unable to establish sales and marketing capabilities or enter into agreements with third parties to sell and market any future product candidates, if approved, we may not be successful in commercializing those product candidates if and when they are approved.

We do not currently have an infrastructure for the sale, marketing, market access, patient service and distribution of pharmaceutical products. In order to market our product candidates, if approved by the FDA or any other regulatory authority outside the United States, we must build our sales, marketing, managerial and other non-technical capabilities, or arrange with third parties to perform these services. There are risks involved with both establishing our own commercial capabilities and entering into arrangements with third parties to perform these services. For example, recruiting and training a sales force or reimbursement specialists is expensive and time-consuming and could delay any product candidate launch. If commercialization is delayed or does not occur, we would have prematurely or unnecessarily incurred such expenses. This may be costly, and our investment would be lost if we cannot retain or reposition our commercialization personnel.

If we enter into arrangements with third parties to perform sales, marketing, commercial support and distribution services, our product revenue or the profitability of product revenue may be lower than if we were to market and sell any products we may develop ourselves. In addition, we may fail to enter into arrangements with third parties to commercialize our product candidates or may be unable to do so on terms that are favorable to us. We may have little control over such third parties, and any of them may fail to devote the necessary resources and attention to sell and market our products effectively. If we do not establish commercialization capabilities successfully, either on our own or in collaboration with third parties, or if we are unable to do so on commercially reasonable terms, we will not be successful in commercializing our product candidates if approved and our business, prospects, financial condition and results of operations will be materially harmed.

Even if we obtain regulatory approval for our product candidates, our product candidates may not achieve broad market acceptance by patients, physicians, healthcare payors or others in the medical community, which would limit the revenue that we recognize from their sales.

The future commercial success of our product candidates, if approved by the FDA or other applicable regulatory authorities outside the United States, will depend upon the awareness and acceptance of our product candidates among the medical community, including patients, physicians, and healthcare payors. If any of our product candidates are approved but do not achieve an adequate level of acceptance by patients, physicians, healthcare payors and others in the medical community, we may not recognize sufficient revenue to become, or remain, profitable. Market acceptance of our product candidates, if approved, will depend on a number of factors, including, among others:

- the efficacy and safety of our approved product candidates as demonstrated in clinical trials;
- the clinical indications for which our product candidates are approved;
- limitations or warnings contained in the labeling approved for our product candidates by the FDA or other applicable regulatory authorities;
- any restrictions on the use of our products together with other medications or restrictions on the use of our products in certain types of patients;
- the prevalence and severity of any adverse effects associated with our product candidates;
- the size of the target patient population, and the willingness of the target patient population to try new therapies and of physicians to prescribe these therapies;
- the safety, efficacy, cost, and other potential advantages of our approved product candidates compared to other available therapies;

- our ability to generate cost effectiveness data that supports a profitable price;
- our ability to obtain sufficient reimbursement and pricing by third-party payors and government authorities;
- the willingness of patients to pay out-of-pocket in the absence of sufficient payor coverage.
- the effectiveness of our sales and marketing strategies; or
- publicity concerning our products or competing products and treatments.

If our product candidates are approved but do not achieve an adequate level of acceptance by patients, physicians and payors, we may not recognize sufficient revenue from our product candidates to become or remain profitable. Before granting reimbursement approval, healthcare payors may require us to demonstrate that our product candidates, in addition to treating these target indications, also provide incremental health benefits to patients. Our efforts to educate the medical community and third-party payors about the benefits of our product candidates may require significant resources and may never be successful.

Reimbursement may be limited or unavailable in certain market segments for our product candidates, which could make it difficult for us to sell our products profitably. Price controls may be imposed in foreign markets, which may harm our future profitability.

In the United States and markets in other countries, patients generally rely on third-party payors to reimburse all or part of the costs associated with their treatment. Adequate coverage and reimbursement from governmental healthcare programs, such as Medicare and Medicaid, and commercial payors is critical to new product acceptance. Market acceptance and sales of any approved product candidates will depend significantly on the availability of adequate coverage and reimbursement from third-party payors and government authorities and may be affected by existing and future health care reform measures. Government authorities and third-party payors, such as private health insurers and health maintenance organizations, decide which drugs they will pay for and establish reimbursement levels. There is also significant uncertainty related to the insurance coverage and reimbursement of newly approved products and coverage may be more limited than the purposes for which the medicine is approved by the FDA or comparable foreign regulatory authorities. In the United States, the principal decisions about reimbursement for new medicines are typically made by the Centers for Medicare & Medicaid Services, or CMS, an agency within the U.S. Department of Health and Human Services, or HHS. CMS decides whether and to what extent a new medicine will be covered and reimbursed under Medicare and private payors tend to follow CMS to a substantial degree. Reimbursement by a third-party payer may depend upon a number of factors, including the third-party payor's determination that use of a product is: a covered benefit under its health plan; safe, effective and medically necessary; appropriate for the specific patient; cost-effective; and neither experimental nor investigational.

Obtaining coverage and reimbursement approval for a product from a government or other third-party payor is a time consuming and costly process that could require us to provide supporting scientific, clinical and cost-effectiveness data for the use of our products to the payor. We or our partners may not be able to provide data sufficient to gain acceptance with respect to coverage and reimbursement. We cannot be sure that coverage or adequate reimbursement will be available for any of our product candidates. Also, we cannot be sure that reimbursement amounts will not reduce the demand for, or the price of, our products. If reimbursement is not available or is available only to limited levels, we may not be able to commercialize certain of our products. In addition, in the United States, third-party payors are increasingly attempting to contain health care costs by limiting both coverage and the level of reimbursement of new drugs. As a result, significant uncertainty exists as to whether and how much third-party payors will reimburse patients for their use of newly approved drugs, which in turn will put pressure on the pricing of drugs.

Net prices for drugs may be reduced by mandatory discounts or rebates required by government healthcare programs or private payors and by any future relaxation of laws that presently restrict imports of drugs from countries where they may be sold at lower prices than in the United States. Increasingly, third-party payors are requiring that drug companies provide them with predetermined discounts from list prices and are challenging the prices charged for medical products. We cannot be sure that reimbursement will be available for any product candidate that we commercialize and, if reimbursement is available, the level of reimbursement. In addition, many

pharmaceutical manufacturers must calculate and report certain price reporting metrics to the government, such as average sales price, or ASP, and best price. Penalties may apply in some cases when such metrics are not submitted accurately and timely. Further, these prices for drugs may be reduced by mandatory discounts or rebates required by government healthcare programs.

In some countries, particularly member states of the European Union, the pricing of prescription drugs is subject to governmental control. In these countries, pricing negotiations with governmental authorities can take considerable time after receipt of marketing approval for a product. In addition, there can be considerable pressure by governments and other stakeholders on prices and reimbursement levels, including as part of cost containment measures. Political, economic and regulatory developments may further complicate pricing negotiations, and pricing negotiations may continue after reimbursement has been obtained. Reference pricing used by various European Union member states and parallel distribution, or arbitrage between low-priced and high-priced member states, can further reduce prices. In some countries, we or our partners may be required to conduct a clinical trial or other studies that compare the cost-effectiveness of our product candidates to other available therapies in order to obtain or maintain reimbursement or pricing approval. Publication of discounts by third-party payors or authorities may lead to further pressure on the prices or reimbursement levels within the country of publication and other countries. If reimbursement of our products is unavailable or limited in scope or amount, or if pricing is set at unsatisfactory levels, our business could be harmed.

Even though BMS has obtained marketing approval for Abecma, it, and any future approved product, will remain subject to regulatory scrutiny.

Even if we or our collaborators obtain marketing approval in a jurisdiction, regulatory authorities may still impose significant restrictions on the indicated uses or marketing of any approved products, or impose ongoing requirements for potentially costly post-approval studies, post-market surveillance or patient or drug restrictions. For example, the FDA typically advises that patients treated with gene therapy undergo follow-up observations for potential adverse events for a 15-year period. Additionally, the holder of an approved BLA is obligated to monitor and report adverse events and any failure of a product to meet the specifications in the BLA. The holder of an approved BLA must also submit new or supplemental applications and obtain FDA approval for certain changes to the approved product, product labeling or manufacturing process. Advertising and promotional materials must comply with FDA rules and are subject to FDA review, in addition to other potentially applicable federal and state laws.

In addition, product manufacturers and their facilities are subject to payment of user fees and continual review and periodic inspections by the FDA and other regulatory authorities for compliance with good manufacturing practices, or GMP, and adherence to commitments made in the BLA. If we, our collaborators, or a regulatory agency discovers previously unknown problems with a product such as adverse events of unanticipated severity or frequency, or problems with the facility where the product is manufactured, a regulatory agency may impose restrictions relative to that product or the manufacturing facility, including requiring recall or withdrawal of the product from the market or suspension of manufacturing.

If we fail to comply with applicable regulatory requirements following marketing approval for a product, a regulatory agency may:

- issue a warning letter asserting that we are in violation of the law;
- seek an injunction or impose civil or criminal penalties or monetary fines;
- suspend or withdraw marketing approval;
- suspend any ongoing clinical studies;
- refuse to approve a pending marketing application, such as a BLA or supplements to a BLA submitted by us;
- seize product; or

- refuse to allow us to enter into supply contracts, including government contracts.

Any government investigation of alleged violations of law could require us to expend significant time and resources in response and could generate negative publicity. The occurrence of any event or penalty described above may inhibit our ability to commercialize any approved product and recognize revenues.

Regulatory approval by the FDA or comparable foreign regulatory authorities is limited to those specific indications and conditions for which approval has been granted, and we may be subject to substantial fines, criminal penalties, injunctions, or other enforcement actions if we are determined to be promoting the use of our products for unapproved or "off-label" uses, or in a manner inconsistent with the approved labeling, resulting in damage to our reputation and business.

We must comply with requirements concerning advertising and promotion for any product candidates for which we or our collaborators obtain marketing approval. Promotional communications with respect to therapeutics are subject to a variety of legal and regulatory restrictions and continuing review by the FDA or comparable foreign regulatory authorities, Department of Justice, Department of Health and Human Services', or HHS, Office of Inspector General, state attorneys general, members of Congress, and the public. When the FDA or comparable foreign regulatory authorities issue a regulatory approval for a product candidate, the regulatory approval is limited to those specific uses and indications for which a product is approved. If we or our collaborators are not able to obtain FDA or comparable foreign regulatory authority approval for desired uses or indications for our products or current product candidates and any future product candidates, we and our collaborators may not market or promote them for those indications and uses, referred to as off-label uses, and our business, financial condition, results of operations, stock price and prospects will be materially harmed. We also must sufficiently substantiate any claims that we make for our products, including claims comparing our products to other companies' products, and must abide by the FDA or a comparable foreign regulatory authority's strict requirements regarding the content of promotion and advertising.

While physicians may choose to prescribe products for uses that are not described in the product's labeling and for uses that differ from those tested in clinical trials and approved by the regulatory authorities, we and any third parties engaged on our behalf are prohibited from marketing and promoting the products for indications and uses that are not specifically approved by the FDA or comparable foreign regulatory authorities. Regulatory authorities in the United States generally do not restrict or regulate the behavior of physicians in their choice of treatment within the practice of medicine. Regulatory authorities do, however, restrict communications by biopharmaceutical companies concerning off-label use.

If we are found to have impermissibly promoted any of our current products and any current or future product candidates, we may become subject to significant liability and government fines. The FDA and other agencies actively enforce the laws and regulations regarding product promotion, particularly those prohibiting the promotion of off-label uses, and a company that is found to have improperly promoted a product may be subject to significant sanctions. The federal government has levied large civil and criminal fines against companies for alleged improper promotion and has enjoined several companies from engaging in off-label promotion. The FDA has also requested that companies enter into consent decrees or permanent injunctions under which specified promotional conduct is changed or curtailed.

Furthermore, the use of our products for indications other than those approved by the FDA or comparable foreign regulatory authorities may not effectively treat such conditions. Any such off-label use of our products could harm our reputation in the marketplace among physicians and patients. There may also be increased risk of injury to patients if physicians attempt to use our products for these uses for which they are not approved, which could lead to product liability suits that that might require significant financial and management resources and that could harm our reputation.

We are subject, directly or indirectly, to federal and state healthcare fraud and abuse laws, false claims laws and health information privacy and security laws. If we are unable to comply, or have not fully complied, with such laws, we could face substantial penalties, reputational harm, and diminished profits and future earnings.

- In the United States, the research, manufacturing, distribution, sale, and promotion of drugs and biologic products are subject to regulation by various federal, state, and local authorities in addition to FDA, including CMS, other divisions of the HHS, (e.g., the Office of Inspector General), the United States Department of Justice offices of the United States Attorney, the Federal Trade Commission and state and local governments. Our operations are directly, or indirectly through our prescribers, customers and purchasers, subject to various federal and state fraud and abuse laws and regulations including but not limited to: the federal Anti-Kickback Statute, which prohibits, among other things, persons or entities from knowingly and willfully soliciting, receiving, offering or paying any remuneration (including any kickback, bribe or rebate), directly or indirectly, overtly or covertly, in cash or in kind, to induce, or in return for, the purchase, lease, order, arrangement, or recommendation of any good, facility, item or service for which payment may be made, in whole or in part, under a federal healthcare program, such as the Medicare and Medicaid programs. A person or entity does not need to have actual knowledge of the federal Anti-Kickback Statute or specific intent to violate it to have committed a violation. Violations are subject to civil and criminal fines and penalties for each violation, plus up to three times the remuneration involved, imprisonment, and exclusion from government healthcare programs. In addition, the government may assert that a claim including items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the federal False Claims Act or federal civil money penalties. On December 2, 2020, the Office of Inspector General, or OIG, published further modifications to the federal Anti-Kickback Statute. Under the final rules, OIG added safe harbor protections under the Anti-Kickback Statute for certain coordinated care and value-based arrangements among clinicians, providers, and others. This rule (with exceptions) became effective January 19, 2021. Implementation of this change and new safe harbors for point-of-sale reductions in price for prescription pharmaceutical products and pharmacy benefit manager service fees are currently under review by the Biden administration and may be amended or repealed. We continue to evaluate what effect, if any, the rule will have on our business;

- the federal civil and criminal false claims laws and civil monetary penalty laws, such as the federal False Claims Act, which impose criminal and civil penalties and authorize civil whistleblower or qui tam actions, against individuals or entities for, among other things: knowingly presenting, or causing to be presented, to the federal government, claims for payment that are false or fraudulent; knowingly making, using or causing to be made or used, a false statement of record material to a false or fraudulent claim or obligation to pay or transmit money or property to the federal government or knowingly concealing or knowingly and improperly avoiding or decreasing an obligation to pay money to the federal government. Manufacturers can be held liable under the federal False Claims Act even when they do not submit claims directly to government payors if they are deemed to “cause” the submission of false or fraudulent claims. The federal False Claims Act also permits a private individual acting as a “whistleblower” to bring actions on behalf of the federal government alleging violations of the federal False Claims Act and to share in any monetary recovery;

- the federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, which created new federal criminal statutes that prohibit a person from knowingly and willfully executing, or attempting to execute, a scheme to defraud any healthcare benefit program or obtain, by means of false or fraudulent pretenses, representations or promises, any of the money or property owned by, or under the custody or control of, any healthcare benefit program, regardless of the payor (e.g., public or private) and knowingly and willfully falsifying, concealing or covering up by any trick or device a material fact or making any materially false, fictitious, or fraudulent statements or representations in connection with the delivery of, or payment for, healthcare benefits, items or services relating to healthcare matters; similar to the federal Anti-Kickback Statute, a person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation;

- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act of 2009, or HITECH and their respective implementing regulations, including the Final Omnibus Rule published in January 2013, which impose requirements on certain covered healthcare providers, health plans, and healthcare clearinghouses as well as their respective business associates, independent contractors or agents of covered entities, that perform services for them that involve the creation, maintenance, receipt, use, or disclosure of, individually identifiable health information relating to the privacy, security and transmission of individually identifiable health information. HITECH also created new tiers of civil monetary penalties, amended HIPAA to make civil and criminal penalties directly applicable to business associates, and gave state attorneys general new authority to file civil actions for damages or injunctions in federal courts to enforce the federal HIPAA laws and seek attorneys' fees and costs associated with pursuing federal civil actions. In addition, there may be additional federal, state and non-U.S. laws which govern the privacy and security of health and other personal information in certain circumstances, many of which differ from each other in significant ways and may not have the same effect, thus complicating compliance efforts;
- the U.S. federal transparency requirements under the ACA, including the provision commonly referred to as the Physician Payments Sunshine Act, and its implementing regulations, which requires applicable manufacturers of drugs, devices, biologics and medical supplies for which payment is available under Medicare, Medicaid or the Children's Health Insurance Program to report annually to CMS, information related to payments or other transfers of value made to physicians (defined to include doctors, dentists, optometrists, podiatrists and chiropractors) and teaching hospitals, as well as ownership and investment interests held by the physicians described above and their immediate family members. Effective January 1, 2022, these reporting obligations will extend to include transfers of value made to certain non-physician providers such as physician assistants and nurse practitioners;
- federal government price reporting laws, which require us to calculate and report complex pricing metrics in an accurate and timely manner to government programs;
- federal consumer protection and unfair competition laws, which broadly regulate marketplace activities and activities that potentially harm consumers;
- Additionally, we are subject to state and foreign equivalents of each of the healthcare laws and regulations described above, among others, some of which may be broader in scope and may apply regardless of the payor. Many U.S. states have adopted laws similar to the federal Anti-Kickback Statute and False Claims Act, and may apply to our business practices, including, but not limited to, research, distribution, sales or marketing arrangements and claims involving healthcare items or services reimbursed by non-governmental payors, including private insurers. In addition, some states have passed laws that require pharmaceutical companies to comply with the April 2003 Office of Inspector General Compliance Program Guidance for Pharmaceutical Manufacturers and/or the Pharmaceutical Research and Manufacturers of America's Code on Interactions with Healthcare Professionals. Several states also impose other marketing restrictions or require pharmaceutical companies to make marketing or price disclosures to the state and require the registration of pharmaceutical sales representatives. State and foreign laws, including for example the European Union General Data Protection Regulation, which became effective May 2018 also govern the privacy and security of health information in some circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts. There are ambiguities as to what is required to comply with these state requirements and if we fail to comply with an applicable state law requirement we could be subject to penalties. Finally, there are state and foreign laws governing the privacy and security of health information, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts.
- These laws apply to, among other things, our sales, marketing and educational programs. State and federal regulatory and enforcement agencies continue actively to investigate violations of health care laws and regulations, and the United States Congress continues to strengthen the arsenal of enforcement tools. Most recently, the Bipartisan Budget Act of 2018 increased the criminal and civil penalties that can be imposed for violating certain federal health care laws, including the Anti-Kickback Statute. Enforcement agencies also continue to pursue novel theories of liability under these laws. In particular, government agencies have

recently increased regulatory scrutiny and enforcement activity with respect to programs supported or sponsored by pharmaceutical companies, including reimbursement and co-pay support, funding of independent charitable foundations and other programs that offer benefits for patients. Several investigations into these programs have resulted in significant civil and criminal settlements.

Because of the breadth of these laws and the narrowness of the statutory exceptions and safe harbors available, it is possible that some of our business activities could be subject to challenge under one or more of such laws. If our operations are found to be in violation of any of the laws described above or any other government regulations that apply to us, we may be subject to penalties, including civil and criminal penalties, damages, fines, exclusion from participation in government health care programs, such as Medicare and Medicaid, imprisonment and the curtailment or restructuring of our operations, any of which could adversely affect our ability to operate our business and our results of operations. Even if we are not determined to have violated these laws, government investigations into these issues typically require the expenditure of significant resources and generate negative publicity, which could harm our financial condition and divert the attention of our management from operating our business.

In addition, we may be subject to patient privacy laws by both the federal government and the states in which we conduct our business. For example, HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act of 2009, or HITECH, and their respective implementing regulations, imposes requirements on certain covered healthcare providers, health plans, and healthcare clearinghouses as well as their respective business associates that perform services for them that involve the use, or disclosure of, individually identifiable health information, relating to the privacy, security and transmission of individually identifiable health information. HITECH also created new tiers of civil monetary penalties, amended HIPAA to make civil and criminal penalties directly applicable to business associates, and gave state attorneys general new authority to file civil actions for damages or injunctions in federal courts to enforce the federal HIPAA laws and seek attorneys' fees and costs associated with pursuing federal civil actions In addition to HIPAA, as amended by HITECH, and their respective implementing regulations, California recently enacted the California Consumer Privacy Act, or CCPA, which creates new individual privacy rights for California consumers (as defined in the law) and places increased privacy and security obligations on entities handling personal data of consumers or households. The CCPA will require covered companies to provide certain disclosures to consumers about its data collection, use and sharing practices, and to provide affected California residents with ways to opt-out of certain sales or transfers of personal information. The CCPA went into effect on January 1, 2020, and the California Attorney General was able to commence enforcement actions against violators beginning July 1, 2020. While there is currently an exception for protected health information that is subject to HIPAA, as currently written, the CCPA may impact our business activities. The California Attorney General has proposed draft regulations, which have not been finalized to date, that may further impact our business activities if they are adopted. The uncertainty surrounding the implementation of CCPA exemplifies the vulnerability of our business to the evolving regulatory environment related to personal data and protected health information.

In the European Union, interactions between pharmaceutical companies, healthcare professionals, and patients are also governed by strict laws, regulations, industry self-regulation codes of conduct and physicians' codes of professional conduct in the individual EU member states. The provision of benefits or advantages to healthcare professionals to induce or encourage the prescription, recommendation, endorsement, purchase, supply, order or use of medicinal products is prohibited in the European Union. Also, direct-to-consumer advertising of prescription-only medicinal products is prohibited at the European Union level and in the individual member states. In addition, the UK Bribery Act applies to any company incorporated in or "carrying on business" in the UK, irrespective of where in the world the alleged bribery activity occurs, which could have implications for our interactions with physicians both in and outside of the UK. Infringement of these laws could result in substantial fines and imprisonment.

Payments made to physicians in certain European Union member states must be publicly disclosed. Moreover, agreements with physicians often must be the subject of prior notification and approval by the physician's employer, his or her competent professional organization and/or the regulatory authorities of the individual European Union member states. These requirements are provided in the national laws, industry codes or professional codes of conduct, applicable in the European Union member states. Failure to comply with these requirements could result in reputational risk, public reprimands, administrative penalties, fines or imprisonment.

EU member states, Switzerland and other countries have also adopted data protection laws and regulations, which impose significant compliance obligations. In the European Union, the collection and use of personal health data is currently governed by the provisions of the General Data Protection Regulation, or the GDPR. The GDPR, together with the national legislation of the individual EU member states governing the processing of personal data, impose strict obligations and restrictions on the ability to collect, analyze and transfer personal data, including health data from clinical trials and adverse event reporting. In particular, these obligations and restrictions concern the consent of the individuals to whom the personal data relates, the information provided to the individuals for the consent to be considered valid, the transfer of personal data out of the European Economic Area, security breach notifications, the use of third-party processors in connection with the processing of the personal data, confidentiality of the personal data, as well as substantial potential fines for breaches of the data protection obligations. Data protection authorities from the different EU member states may interpret the GDPR and national laws differently and impose additional requirements, which add to the complexity of processing personal data in the European Union. The GDPR also imposes strict rules on the transfer of personal data to countries outside the European Union, including the United States, and permits data protection authorities to impose large penalties for violations of the GDPR, including potential fines of up to €20 million or 4% of annual global revenues, whichever is greater. The GDPR also confers a private right of action on data subjects and consumer associations to lodge complaints with supervisory authorities, seek judicial remedies, and obtain compensation for damages resulting from violations of the GDPR. Compliance with the GDPR is a rigorous and time-intensive process that may increase our cost of doing business or require us to change our business practices, and despite those efforts, there is a risk that we may be subject to fines and penalties, litigation, and reputational harm in connection with any activities falling within the scope of the GDPR. Further, Brexit has created uncertainty with regard to data protection regulation in the United Kingdom. In particular, it is unclear how data transfers to and from the United Kingdom will be regulated.

We face intense competition and rapid technological change and the possibility that our competitors may develop therapies that are more advanced or effective than ours, which may adversely affect our financial condition and our ability to successfully commercialize our product and any future products. If our competitors obtain orphan drug exclusivity for products that regulatory authorities determine constitute the same drug and treat the same indications as our product or any future products, we may not be able to have competing products approved by the applicable regulatory authority for a significant period of time.

We are engaged in the development of gene therapies for cancer and this field is competitive and rapidly changing. We have competitors both in the United States and internationally, including major multinational pharmaceutical companies, biotechnology companies and universities and other research institutions. Many of our competitors have substantially greater financial, technical and other resources, such as larger research and development staff, manufacturing capabilities, experienced marketing and manufacturing organizations. Competition may increase further as a result of advances in the commercial applicability of technologies and greater availability of capital for investment in these industries. Our competitors may succeed in developing, acquiring or licensing on an exclusive basis, products that are more effective, safer, or less costly than any products that we may develop, or achieve patent protection, marketing approval, product commercialization and market penetration earlier than us. Additionally, technologies developed by our competitors may render our potential products uneconomical or obsolete, and we may not be successful in marketing our product candidates against competitors.

Even if we are successful in achieving marketing approval to commercialize a product candidate faster than our competitors, we may face competition from biosimilars due to the changing regulatory environment. In the United States, the Biologics Price Competition and Innovation Act of 2009 created an abbreviated approval pathway for biological products that are demonstrated to be “highly similar,” or biosimilar, to or “interchangeable” with an FDA-approved biological product. This pathway could allow competitors to reference data from biological products already approved after 12 years from the time of approval. In Europe, the European Commission has granted marketing authorizations for several biosimilars pursuant to a set of general and product class-specific guidelines for biosimilar approvals issued over the past few years. In Europe, a competitor may reference data from biological products already approved, but will not be able to get on the market until 10 years after the time of approval. This 10-year period will be extended to 11 years if, during the first eight of those 10 years, the marketing authorization holder obtains an approval for one or more new therapeutic indications that bring significant clinical benefits compared with existing therapies. In addition, companies may be developing biosimilars in other countries that

could compete with our products. If competitors are able to obtain marketing approval for biosimilars referencing our products, our products may become subject to competition from such biosimilars, with the attendant competitive pressure and consequences. Expiration or successful challenge of our applicable patent rights could also trigger competition from other products, assuming any relevant exclusivity period has expired.

In addition, although Abecma and bb21217 have been granted orphan drug status by the FDA and EMA, there are limitations to the exclusivity. In the United States, the exclusivity period for orphan drugs is seven years, while pediatric exclusivity adds six months to any existing patents or exclusivity periods. In Europe, orphan drugs may be able to obtain 10 years of marketing exclusivity and up to an additional two years on the basis of qualifying pediatric studies. However, orphan exclusivity may be reduced to six years if the drug no longer satisfies the original designation criteria. Additionally, a marketing authorization holder may lose its orphan exclusivity if it consents to a second orphan drug application or cannot supply enough drug. Orphan drug exclusivity also can be lost when a second applicant demonstrates its drug is "clinically superior" to the original orphan drug. Generally, if a product with an orphan drug designation receives the first marketing approval for the indication for which it has such designation, the product is entitled to a period of marketing exclusivity, which precludes the FDA or the European Commission from approving another marketing application for a product that constitutes the same drug treating the same indication for that marketing exclusivity period, except in limited circumstances. If another sponsor receives such approval before we do (regardless of our orphan drug designation), we will be precluded from receiving marketing approval for our product for the exclusivity period for the applicable indication.

Finally, as a result of the expiration or successful challenge of our patent rights, we could face more litigation with respect to the validity and/or scope of patents relating to our competitors' products. The availability of our competitors' products could limit the demand, and the price we are able to charge, for any products that we may develop and commercialize.

We face potential product liability, and, if successful claims are brought against us, we may incur substantial liability and costs. If the use of any of our product candidates and, if approved, our products harms patients, or is perceived to harm patients even when such harm is unrelated to such product candidate or product, our marketing approvals could be revoked or otherwise negatively impacted and we could be subject to costly and damaging product liability claims.

The use of our product candidates in clinical studies and the sale of any products for which we obtain marketing approval exposes us to the risk of product liability claims. Product liability claims might be brought against us by patients participating in clinical trials, consumers, healthcare providers, pharmaceutical companies or others selling or otherwise coming into contact with our product or product candidates. There is a risk that our product candidates or any product for which we obtain marketing approval may induce adverse events. If we cannot successfully defend against product liability claims, we could incur substantial liability and costs. In addition, regardless of merit or eventual outcome, product liability claims may result in:

- impairment of our business reputation;
- withdrawal of clinical study participants;
- costs due to related litigation;
- distraction of management's attention from our primary business;
- substantial monetary awards to patients or other claimants;
- the inability to develop our product candidates or commercialize any approved product; and
- decreased demand for any approved product.

We carry product liability insurance and we believe our product liability insurance coverage is sufficient in light of our current clinical programs; however, we may not be able to maintain insurance coverage at commercially reasonable cost or in sufficient amounts to protect us against losses due to liability. On occasion, large judgments have been awarded in class action lawsuits based on drugs or medical treatments that had unanticipated adverse

effects. A successful product liability claim or series of claims brought against us could cause our stock price to decline and, if judgments exceed our insurance coverage, could adversely affect our results of operations and business.

Patients with the diseases targeted by our product candidates are often already in severe and advanced stages of disease and have both known and unknown significant pre-existing and potentially life-threatening health risks. During the course of treatment, patients may suffer adverse events, including death, for reasons that may be related to our product candidates. Such events could subject us to costly litigation, require us to pay substantial amounts of money to injured patients, delay, negatively impact or end our opportunity to receive or maintain marketing approval for any approved product, or require us to suspend or abandon our commercialization efforts for any approved product. Even in a circumstance in which we do not believe that an adverse event is related to our products the investigation into the circumstance may be time-consuming or inconclusive. These investigations may impact and limit the type of marketing approval our product candidates may receive or any approved product maintains. As a result of these factors, a product liability claim, even if successfully defended, could have a material adverse effect on our business, financial condition or results of operations.

Healthcare legislative reform measures may have a material adverse effect on our business and results of operations.

The United States and many foreign jurisdictions have enacted or proposed legislative and regulatory changes affecting the healthcare system that could prevent or delay marketing approval of our product candidates or any future product candidates, restrict or regulate post-approval activities and affect our ability to profitably sell any product for which we obtain marketing approval. Changes in regulations, statutes or the interpretation of existing regulations could impact our business in the future by requiring, for example: (i) changes to our manufacturing arrangements; (ii) additions or modifications to product labeling; (iii) the recall or discontinuation of our products; or (iv) additional record-keeping requirements. If any such changes were to be imposed, they could adversely affect the operation of our business.

In the United States, there have been and continue to be a number of legislative initiatives to contain healthcare costs. For example, in March 2010, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act of 2010, or the Affordable Care Act or ACA, was passed, which substantially changed the way health care is financed by both governmental and private insurers, and significantly impacts the U.S. pharmaceutical industry. The Affordable Care Act, among other things, addressed a new methodology by which rebates owed by manufacturers under the Medicaid Drug Rebate Program are calculated for drugs that are inhaled, infused, instilled, implanted or injected, increased the minimum Medicaid rebates owed by manufacturers under the Medicaid Drug Rebate Program and extended the rebate program to individuals enrolled in Medicaid managed care organizations, established annual fees and taxes on manufacturers of certain branded prescription drugs, expanded the types of entities eligible for the 340B drug discount program, and a new Medicare Part D coverage gap discount program, in which manufacturers must agree to offer 50% (increased to 70% pursuant to the Bipartisan Budget Act of 2018, effective as of 2019) point-of-sale discounts off negotiated prices of applicable brand drugs to eligible beneficiaries during their coverage gap period, as a condition for the manufacturer’s outpatient drugs to be covered under Medicare Part D.

Since its enactment, there have been numerous judicial, administrative, executive, and legislative challenges to certain aspects of the Affordable Care Act, and we expect there will be additional challenges and amendments to the Affordable Care Act in the future. Various portions of the Affordable Care Act are currently undergoing legal and constitutional challenges in the Fifth Circuit Court and the United States Supreme Court. It is unclear whether the Affordable Care Act will be overturned, repealed, replaced, or further amended. We cannot predict what effect further changes to the Affordable Care Act would have on our business.

In addition, other legislative changes have been proposed and adopted since the Affordable Care Act was enacted. In August 2011, President Obama signed into law the Budget Control Act of 2011, which, among other things, created the Joint Select Committee on Deficit Reduction to recommend to Congress proposals in spending reductions. The Joint Select Committee on Deficit Reduction did not achieve a targeted deficit reduction, which triggered the legislation’s automatic reduction to several government programs. This includes aggregate reductions

to Medicare payments to providers of, on average, 2% per fiscal year through 2025 unless Congress takes additional action. These reductions were extended through 2030 through subsequent legislative amendments. Pursuant to the Coronavirus Aid, Relief, and Economic Security Act, also known as the CARES Act, as well as subsequent legislation, these reductions have been suspended from May 1, 2020 through March 31, 2021 due to the COVID-19 pandemic. Proposed legislation, if passed, would extend this suspension until the end of the pandemic. In January 2013, the American Taxpayer Relief Act of 2012, among other things, further reduced Medicare payments to several providers, including hospitals and cancer treatment centers, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years.

There has been increasing legislative and enforcement interest in the United States with respect to specialty drug pricing practices. Specifically, there have been several recent U.S. Congressional inquiries and proposed federal and state legislation designed to, among other things, bring more transparency to drug pricing, reduce the cost of prescription drugs under Medicare, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for drugs.

The former Trump administration's budget proposal for fiscal year 2021 included a $135 billion allowance to support legislative proposals seeking to reduce drug prices, increase competition, lower out-of-pocket drug costs for patients, and increase patient access to lower-cost generic and biosimilar drugs. On March 10, 2020, the former Trump administration sent "principles" for drug pricing to Congress, calling for legislation that would, among other things, cap Medicare Part D beneficiary out-of-pocket pharmacy expenses, provide an option to cap Medicare Part D beneficiary monthly out-of-pocket expenses, and place limits on pharmaceutical price increases. Further, the former Trump administration also previously released a "Blueprint" to lower drug prices and reduce out of pocket costs of drugs that contains additional proposals to increase manufacturer competition, increase the negotiating power of certain federal healthcare programs, incentivize manufacturers to lower the list price of their products and reduce the out of pocket costs of drug products paid by consumers. The U.S. Department of Health and Human Services, or HHS, has already started the process of soliciting feedback on some of these measures and, at the same time, is immediately implementing others under its existing authority. For example, in May 2019, CMS issued a final rule to allow Medicare Advantage Plans the option of using step therapy for Part B drugs beginning January 1, 2020. However, it is unclear whether the Biden administration will challenge, reverse, revoke or otherwise modify these executive and administrative actions after January 20, 2021.

In 2020, former President Trump announced several executive orders related to prescription drug pricing that seek to implement several of the administration's proposals. In response FDA released a final rule on September 24, 2020, which went into effect on November 30, 2020, providing guidance for states to build and submit importation plans for drugs from Canada. Further, on November 20, 2020 CMS issued an Interim Final Rule implementing the Most Favored Nation, or MFN, Model under which Medicare Part B reimbursement rates will be calculated for certain drugs and biologicals based on the lowest price drug manufacturers receive in Organization for Economic Cooperation and Development countries with a similar gross domestic product per capita. The MFN Model regulations mandate participation by identified Part B providers and would have applied to all U.S. states and territories for a seven-year period beginning January 1, 2021, and ending December 31, 2027. However, in response to a lawsuit filed by several industry groups, on December 28, the U.S. District Court for the Northern District of California issued a nationwide preliminary injunction enjoining government defendants from implementing the MFN Rule pending completion of notice-and-comment procedures under the Administrative Procedure Act. On January 13, 2021, in a separate lawsuit brought by industry groups in the U.S. District of Maryland, the government defendants entered a joint motion to stay litigation on the condition that the government would not appeal the preliminary injunction granted in the U.S. District Court for the Northern District of California and that performance for any final regulation stemming from the MFN Interim Final Rule shall not commence earlier than 60 days after publication of that regulation in the Federal Register. Further, authorities in Canada have passed rules designed to safeguard the Canadian drug supply from shortages. If implemented, importation of drugs from Canada and the MFN Model may materially and adversely affect the price we receive for any of our product candidates. Additionally, on December 2, 2020, HHS published a regulation removing safe harbor protection for price reductions from pharmaceutical manufacturers to plan sponsors under Part D, either directly or through pharmacy benefit managers, unless the price reduction is required by law. The rule also creates a new safe harbor for price reductions reflected at the point-of-sale, as well as a safe harbor for certain fixed fee arrangements between

pharmacy benefit managers and manufacturers. Pursuant to an order entered by the U.S. District Court for the District of Columbia, the portion of the rule eliminating safe harbor protection for certain rebates related to the sale or purchase of a pharmaceutical product from a manufacturer to a plan sponsor under Medicare Part D has been delayed to January 1, 2023. Further, implementation of this change and new safe harbors for point-of-sale reductions in price for prescription pharmaceutical products and pharmacy benefit manager service fees are currently under review by the Biden administration and may be amended or repealed. Although a number of these and other proposed measures may require authorization through additional legislation to become effective, and the Biden administration may reverse or otherwise change these measures, Congress has indicated that it will continue to seek new legislative measures to control drug costs.

At the state level, legislatures have increasingly passed legislation and implemented regulations designed to control pharmaceutical and biological product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, designed to encourage importation from other countries and bulk purchasing.

We expect that the healthcare reform measures that have been adopted and may be adopted in the future, may result in more rigorous coverage criteria and in additional downward pressure on the price that we receive for any approved product and could seriously harm our future revenues. Any reduction in reimbursement from Medicare or other government programs may result in a similar reduction in payments from private third-party payors.

The delivery of healthcare in the European Union, including the establishment and operation of health services and the pricing and reimbursement of medicines, is almost exclusively a matter for national, rather than EU, law and policy. National governments and health service providers have different priorities and approaches to the delivery of health care and the pricing and reimbursement of products in that context. In general, however, the healthcare budgetary constraints in most EU member states have resulted in restrictions on the pricing and reimbursement of medicines by relevant health service providers. Coupled with ever-increasing EU and national regulatory burdens on those wishing to develop and market products, this could prevent or delay marketing approval of our product candidates, restrict or regulate post-approval activities and affect our ability to commercialize any products for which we obtain marketing approval.

There have been, and likely will continue to be, legislative and regulatory proposals at the foreign, federal and state levels directed at broadening the availability of healthcare and containing or lowering the cost of healthcare. The implementation of cost containment measures or other healthcare reforms may prevent us from being able to recognize revenue, attain profitability, or commercialize our product. Such reforms could have an adverse effect on anticipated revenue from product candidates that we may successfully develop and for which we may obtain marketing approval and may affect our overall financial condition and ability to develop product candidates.

Our future growth may depend, in part, on our ability to commercialize our product candidates outside the United States, where we would be subject to additional regulatory burdens and other risks and uncertainties.

Our future profitability may depend, in part, on our ability to commercialize our product candidates outside the United States for which we may rely on partnerships with third parties. If we commercialize our product candidates outside the United States, we would be subject to additional risks and uncertainties, including:

- our customers' ability to obtain reimbursement for our product candidates outside the United States;
- our ability to gain reimbursement in foreign markets at a price that is profitable;
- our inability to directly control commercial activities because we are relying on third parties;
- the burden of complying with complex and changing foreign regulatory, tax, accounting and legal requirements;
- different medical practices and customs in foreign countries affecting acceptance in the marketplace;
- import or export licensing requirements;

- longer accounts receivable collection times;
- longer lead times for shipping;
- language barriers for technical training;
- reduced protection of intellectual property rights in some foreign countries;
- the existence of additional potentially relevant third-party intellectual property rights;
- foreign currency exchange rate fluctuations; and
- the interpretation of contractual provisions governed by foreign laws in the event of a contract dispute.

Foreign sales of our product candidates could also be harmed by the imposition of governmental controls, political and economic instability, trade restrictions and changes in tariffs.

Risks Related to Our Business Operations

Our prospects for success depend on our ability to retain our management team and to attract, retain and motivate qualified personnel.

We are highly dependent on our management, scientific and medical personnel, including our chief executive officer, chief financial officer, and chief scientific officer. Despite our efforts to retain valuable employees, members of our management, scientific and development teams may terminate their employment with us on short notice. The loss of the services of any of our executive officers, other key employees and other scientific and medical advisors and an inability to find suitable replacements could result in delays in product development and harm our business. Our success also depends on our ability to continue to attract, retain and motivate highly skilled junior, mid-level and senior managers as well as junior, mid-level and senior scientific and medical personnel.

We may not be able to attract or retain qualified management and scientific personnel in the future due to the intense competition for a limited number of qualified personnel among biopharmaceutical, biotechnology, pharmaceutical and other businesses. Many of the other pharmaceutical companies that we compete against for qualified personnel have greater financial and other resources, different risk profiles and a longer history in the industry than we do. They also may provide more diverse opportunities and better chances for career advancement. Some of these characteristics may be more appealing to high quality candidates than what we may be able to offer. We also experience competition for the hiring of scientific personnel from universities and research institutions. The failure to succeed in preclinical or clinical studies may make it more challenging to recruit and retain qualified personnel. In addition, in order to induce employees to continue their employment with us, we have provided equity awards that vest over time and the value to our employees of such equity awards may be significantly affected by movements in our stock price that are beyond our control and may be at any time insufficient to counteract more lucrative offers from other companies. If we are unable to continue to attract and retain high quality personnel, the rate and success at which we can develop and commercialize product candidates will be limited.

Our operating results may fluctuate significantly, which would have the result of making our future operating results difficult to predict and could cause our operating results to fall below expectations or our guidance.

Our operating results will likely fluctuate from quarter to quarter and year to year and be difficult to predict. This uncertainty is heightened by the unpredictable scope of the impact of the COVID-19 pandemic, which has adversely affected the operations of third parties upon which we rely in our commercialization efforts, patient access to hospitals, physicians' offices, clinics and other administration sites, and global economic conditions, as well as caused a re-prioritization of healthcare services.

In addition, our licensing and collaboration agreements with other companies include research and development funding and milestone payments to us, and we expect that amounts earned from our collaboration agreements will be an important source of our revenues. Accordingly, our revenues will also depend on research and development funding and the achievement of development and clinical milestones under our existing collaboration and license

agreements, including, in particular, our collaborations with BMS and Regeneron, as well as entering into potential new collaboration and license agreements. These payments may vary significantly from quarter to quarter and any such variance could cause a significant fluctuation in our operating results from one quarter to the next.

Further, changes in our operations, such as increased development, manufacturing and clinical trial expenses in connection with our expanding pipeline programs, or our undertaking of additional programs, or business activities, or entry into strategic transactions, including potential future acquisitions of products, technologies or businesses may also cause significant fluctuations in our expenses.

The cumulative effects of these factors, further exacerbated by the impacts of the ongoing COVID-19 pandemic on healthcare systems and economic conditions, will likely result in large fluctuations and unpredictability in our quarterly and annual operating results. As a result, comparing our operating results on a period-to-period basis may not be meaningful. Investors should not rely on our past results as an indication of our future performance. This variability and unpredictability could also result in our failing to meet the expectations of industry or financial analysts or investors for any period. If our revenue or operating results fall below the expectations of analysts or investors or below any forecasts we may provide to the market, or if the forecasts we provide to the market are below the expectations of analysts or investors, the price of our common stock could decline substantially. Such a stock price decline could occur even when we have met any previously publicly stated revenue or earnings guidance we may provide.

We will need to expand our organization and we may experience difficulties in managing this growth, which could disrupt our operations.

bluebird bio has designated approximately 460 full-time employees to join 2seventy bio upon completion of the separation. As we mature, we expect to expand our full-time employee base and to hire more consultants and contractors. Our management may need to divert a disproportionate amount of its attention away from our day-to-day activities and devote a substantial amount of time to managing these growth activities. We may not be able to effectively manage the expansion of our operations, which may result in weaknesses in our infrastructure, operational mistakes, loss of business opportunities, loss of employees and reduced productivity among remaining employees. Our expected growth could require significant capital expenditures and may divert financial resources from other projects, such as the development of additional product candidates. If our management is unable to effectively manage our growth, our expenses may increase more than expected, our ability to recognize and/or grow revenues could be reduced and we may not be able to implement our business strategy. Our future financial performance and our ability to commercialize product candidates and compete effectively will depend, in part, on our ability to effectively manage any future growth.

We will incur increased costs as a result of operating as a public company. If we fail to maintain proper and effective internal controls, our ability to produce accurate and timely financial statements could be impaired, which could result in sanctions or other penalties that would harm our business.

Following the distribution, we will be subject to the reporting requirements of the Securities Exchange Act of 1934, or the Exchange Act, the Sarbanes-Oxley Act of 2002, or the Sarbanes-Oxley Act, and the rules and regulations of The Nasdaq Global Select Market . Our financial results historically were included within the consolidated results of bluebird bio, and until the distribution occurs, we have not been and will not be directly subject to reporting and other requirements of the Exchange Act and Section 404 of the Sarbanes-Oxley Act. After the distribution, we will qualify as an "emerging growth company". For so long as we remain an emerging growth company, we will be exempt from Section 404(b) of the Sarbanes-Oxley Act, which requires auditor attestation to the effectiveness of internal control over financial reporting. We will cease to be an emerging growth company on the date that is the earliest of (i) the last day of the fiscal year in which we have total gross annual revenues of $1.07 billion or more; (ii) the last day of our fiscal year following the fifth anniversary of the date of the distribution; (iii) the date on which we have issued more than $1 billion in nonconvertible debt during the previous three years; or (iv) the date on which we are deemed to be a large accelerated filer under the rules of the SEC. We cannot predict if investors will find our common stock less attractive because we may rely on the exemptions available to us as an emerging growth company. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and our stock price may be more volatile.

We will, however, be immediately subject to Section 404(a) of the Sarbanes-Oxley Act and, as of the expiration of our emerging growth company status, we will be broadly subject to enhanced reporting and other requirements under the Exchange Act and Sarbanes-Oxley Act. This will require, among other things, annual management assessments of the effectiveness of our internal control over financial reporting beginning in our second annual report filed after the distribution and a report by our independent registered public accounting firm addressing these assessments. These and other obligations will place significant demands on our management, administrative and operational resources, including accounting and information technology resources. To comply with these requirements, we anticipate that we will need to further upgrade our systems, including duplicating computer hardware infrastructure, implement additional financial and management controls, reporting systems and procedures and hire additional accounting, finance and information technology staff. Our management and other personnel will need to devote a substantial amount of time to these compliance initiatives. Moreover, these rules and regulations will increase our legal and financial compliance costs and will make some activities more time-consuming and costlier. If we are unable to do this in a timely and effective fashion, our ability to comply with our financial reporting requirements and other rules that apply to reporting companies could be impaired and our business, prospects, financial condition and results of operations could be harmed.

We may discover weaknesses in our system of internal financial and accounting controls and procedures that could result in a material misstatement of our financial statements. Our internal control over financial reporting will not prevent or detect all errors and all fraud. A control system, no matter how well designed and operated, can provide only reasonable, not absolute, assurance that the control system's objectives will be met. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that misstatements due to error or fraud will not occur or that all control issues and instances of fraud will be detected.

If we are not able to comply with the requirements of Section 404 of the Sarbanes-Oxley Act in a timely manner, or if we are unable to maintain proper and effective internal controls over financial reporting, we may not be able to produce timely and accurate financial statements. If that were to happen, our investors could lose confidence in our reported financial information, the market price of our stock could decline, and we could be subject to sanctions or investigations by the SEC or other regulatory authorities.

Unfavorable global economic conditions could harm our business, prospects, financial condition and results of operations.

Our results of operations could be harmed by general conditions in the global economy and in the global financial markets. A severe or prolonged economic downturn could result in a variety of risks to our business, including, weakened demand for our product candidates and our ability to raise additional capital when needed on acceptable terms, if at all. A weak or declining economy could also strain our suppliers, possibly resulting in supply disruption, or cause our customers to delay making payments for our services. Any of the foregoing could harm our business, prospects, financial condition and results of operations.

Our computer systems, or those of our third-party collaborators, service providers, contractors or consultants, may fail or suffer security breaches, which could result in a material disruption of our product candidates' development programs and have a material adverse effect on our reputation, business, financial condition or results of operations.

Our computer systems and those of our current or future third-party collaborators, service providers, contractors and consultants may fail and are vulnerable to damage from computer viruses, unauthorized access, natural disasters, terrorism, war and telecommunication and electrical failures. The size and complexity of our information technology systems, and those of our collaborators, service providers, contractors and consultants, and the large amounts of information stored on those systems make those systems vulnerable to service interruptions, security breaches, or other failures, resulting from inadvertent or intentional actions by our employees or those of third-party business partners, or from cyber-attacks by malicious third parties. Attacks on information technology systems are increasing in their frequency, levels of persistence, sophistication and intensity, and they are being conducted by increasingly sophisticated and organized groups and individuals with a wide range of motives and expertise. In addition to extracting sensitive information, such attacks could include the deployment of harmful malware, ransomware, denial-of-service attacks, social engineering and other means to affect service reliability and threaten the

confidentiality, integrity and availability of information. The prevalent use of mobile devices also increases the risk of data security incidents. If we experience a material system failure, accident or security breach that causes interruptions in our operations or the operations of third-party collaborators, service providers, contractors and consultants, it could result in significant reputational, financial, legal, regulatory, business or operational harm. For example, the loss of clinical trial data for our product candidates could result in delays in our marketing approval efforts and significantly increase our costs to recover or reproduce the data. To the extent that any disruption or security breach results in a loss of or damage to our data or applications or other data or applications relating to our technology or product candidates, or inappropriate disclosure of confidential or proprietary information, we could incur liabilities and the further development of our product candidates could be delayed. In addition, we rely on third-party service providers for management of the manufacture and delivery of drug product to patients in the commercial context, including for chain of identity and chain of custody. We also rely on third-party service providers for aspects of our internal control over financial reporting and such service providers may experience a material system failure or fail to carry out their obligations in other respects, which may impact our ability to produce accurate and timely financial statements, thus harming our operating results, our ability to operate our business, and our investors' view of us. In addition, our liability insurance may not be sufficient in type or amount to cover us against claims related to material failures, security breaches, cyberattacks and other related breaches.

Any failure or perceived failure by us or any third-party collaborators, service providers, contractors or consultants to comply with our privacy, confidentiality, data security or similar obligations to third parties, or any data security incidents or other security breaches that result in the unauthorized access, release or transfer of sensitive information, including personally identifiable information, may result in governmental investigations, enforcement actions, regulatory fines, litigation or public statements against us. These events could cause third parties to lose trust in us or could result in claims by third parties asserting that we have breached our privacy, confidentiality, data security or similar obligations, any of which could have a material adverse effect on our reputation, business, financial condition or results of operations. Moreover, data security incidents and other security breaches can be difficult to detect, and any delay in identifying them may lead to increased harm. While we have implemented data security measures intended to protect our information technology systems and infrastructure, there can be no assurance that such measures will successfully prevent service interruptions or data security incidents.

Our employees may engage in misconduct or other improper activities, including violating applicable regulatory standards and requirements or engaging in insider trading, which could significantly harm our business.

We are exposed to the risk of employee fraud or other misconduct. Misconduct by employees could include intentional failures to comply with the regulations of the FDA and applicable foreign regulators, provide accurate information to the FDA and applicable foreign regulators, comply with healthcare fraud and abuse laws and regulations in the United States and abroad, report financial information or data accurately and/or disclose unauthorized activities to us. In particular, research and development, sales, marketing and business arrangements in the healthcare industry are subject to considerable laws and regulations intended to prevent fraud, misconduct, kickbacks, self-dealing and other abusive practices. These laws and regulations restrict, regulate or prohibit a wide range of activities pertaining to clinical trials including the informed consent process, data integrity, and conducting the study in accordance with the investigational plan, and for approved products, pricing, discounting, marketing and promotion, sales commission, customer incentive programs and other business arrangements. Employee misconduct could also involve the improper use of, including trading on, information obtained in the course of clinical trials, which could result in regulatory sanctions and serious harm to our reputation. Prior to effecting the distribution of any approved products, we will adopt a code of conduct, but it is not always possible to identify and deter employee misconduct, and the precautions we take to detect and prevent this activity may be ineffective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to comply with these laws or regulations. Additionally, we are subject to the risk that a person could allege such fraud or other misconduct, even if none occurred. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could have a significant impact on our business, including the imposition of significant fines or other sanctions, possible exclusions from participation in Medicare, Medicaid and other U.S. federal healthcare programs, contractual damages and reputational harm.

If we or any contract manufacturers and suppliers we engage fail to comply with environmental, health and safety laws and regulations, we could become subject to fines or penalties or incur costs that could have a material adverse effect on the success of our business.

We and any contract manufacturers and suppliers we engage are subject to numerous federal, state and local environmental, health and safety laws, regulations and permitting requirements, including those governing laboratory procedures; the generation, handling, use, storage, treatment and disposal of hazardous and regulated materials and wastes; the emission and discharge of hazardous materials into the ground, air and water; and employee health and safety. Under certain environmental laws, we could be held responsible for costs relating to any contamination at our current or past facilities and at third-party facilities. We also could incur significant costs associated with civil or criminal fines and penalties.

We could be adversely affected by violations of the U.S. Foreign Corrupt Practices Act, or the FCPA, and other worldwide anti-bribery laws.

We are subject to the FCPA, which prohibits U.S. corporations and their representatives from offering, promising, authorizing or making payments to any foreign government official, government staff member, political party or political candidate in an attempt to obtain or retain business abroad. The scope of the FCPA includes interactions with certain healthcare professionals in many countries. Other countries have enacted similar anti-corruption laws and/or regulations. In some countries in which we operate, the pharmaceutical and life sciences industries are exposed to a high risk of corruption associated with the conduct of clinical trials and other interactions with healthcare professionals and institutions. While we intend to conduct any foreign operations in compliance with the FCPA, any such activities could expose us to potential liability under the FCPA, which may result in us incurring significant criminal and civil penalties and to potential liability under the anti-corruption laws and regulations of other jurisdictions in which we operate. In addition, the costs we may incur in defending against an FCPA investigation could be significant.

Risks Related to the Separation

We may not achieve some or all of the expected benefits of the separation, and the separation could harm our business, prospects, financial condition and results of operations.

We may not be able to achieve some or all of the anticipated strategic, financial, operational, marketing or other benefits expected to result from the separation, or such benefits may be delayed or not occur at all. These actions may not provide the benefits we currently expect, and could lead to disruption of our operations, loss of or inability to recruit, key personnel needed to operate and grow our businesses following the separation, weakening of our internal standards, controls or procedures and impairment of our key collaborations and supplier relationships. In addition, completion of the separation has and will continue to require significant amounts of management's time and effort, which may divert management's attention from operating and growing our businesses.

By separating from bluebird bio, we may become more susceptible to market fluctuations and other adverse events than we would have been if we were still a part of the current bluebird bio organizational structure. As part of bluebird bio, we have been able to benefit from bluebird bio’s experience and expertise as a commercial-stage company developing multiple products, and opportunities to pursue integrated strategies with bluebird bio’s other business activities. We have also benefited from bluebird bio’s strategic advantages as an established market participant, including its improved negotiating power and historical partnerships. Additionally, as part of bluebird bio, we benefited from bluebird bio’s market reputation, historical performance and brand identity when operating our business. As a newly formed, independent, publicly traded company, we will not have, and may never develop, a comparable market reputation, performance or brand identity of our own, which may limit our ability to recruit and retain personnel, pursue and negotiate strategic transactions, and access the capital markets to finance our operations. If we fail to achieve some or all of the benefits that we expect to achieve as an independent company, or do not achieve them in the time we expect, our business, prospects, financial condition and results of operations may be materially harmed.

The spin-off may not be successful and as an independent, publicly traded company, we will not enjoy the same benefits that we did as a portfolio business within bluebird bio.

Upon completion of the spin-off, we will be a stand-alone public company. The process of becoming a stand-alone public company may distract our management from focusing on our business and strategic priorities. Further, we may not be able to issue debt or equity on terms acceptable to us or at all and we may not be able to attract and retain employees as desired. We also may not fully realize the anticipated benefits of the separation and of being a stand-alone public company, or the realization of such benefits may be delayed, if any of the risks identified in this “Risk Factors” section, or other events, were to occur.

As a separate public company, we will be a smaller and less diversified company than bluebird bio, and we may not have access to financial and other resources comparable to those available to bluebird bio prior to the spin-off or enjoy certain other benefits that we did while part of bluebird bio. We cannot predict the effect that the spin-off will have on our relationship with partners or employees or our relationship with government regulators. We may also be unable to obtain goods, technology and services at prices and on terms as favorable as those available to us prior to the spin-off. Furthermore, as a less diversified company, we may be more likely to be negatively impacted by changes in global market conditions, regulatory reforms and other industry factors, which could have a material adverse effect on our business, prospects, financial condition and results of operations.

We may be unable to make, on a timely or cost-effective basis, the changes necessary to operate as an independent company, and we will be reliant on bluebird bio for the provision of certain services for a period of time.

We have historically operated as part of bluebird bio’s corporate organization, and bluebird bio has assisted us by providing various corporate and other business functions. Following the separation, bluebird bio will have no obligation to assist our operations or growth strategy, other than providing certain services pursuant to agreements described under "Certain Relationships and Related Person Transactions—Agreements with bluebird bio." For a period of time following the separation, we will be substantially reliant on bluebird bio to provide these limited services, and if bluebird bio is unable or unwilling to satisfy its obligations under these agreements, we could incur operational difficulties or losses that could have a material and adverse effect on our business, prospects, financial condition and results of operations.

Furthermore, the services to be provided by bluebird bio under this agreement do not include every service or all of the information and technology systems that we have received from bluebird bio in the past or that are necessary to successfully operate our business, and bluebird bio is only obligated to provide these services for limited periods of time from the distribution date. Accordingly, following the separation, we will need to develop internal capabilities to perform these services, or obtain from other third parties services we currently receive from bluebird bio. If we are unable to efficiently implement our own systems and services, or if we are unable to negotiate agreements with third-party providers of these services in a timely manner or on terms and conditions as favorable as those we receive from bluebird bio, we may not be able to operate our business effectively and our financial condition may decline. Furthermore, if we fail to develop high-quality internal capabilities, or obtain comparable services from third-party providers, in a cost-effective manner, we may be unable to operate our existing business or execute our strategic priorities successfully and efficiently, and our operating results and financial condition may be materially harmed.

We have no history of operating as an independent company and we expect to incur increased administrative and other costs following the separation by virtue of our status as an independent public company. Our historical and pro forma financial information is not necessarily representative of the results that we would have achieved as a separate, publicly traded company and should not be relied upon as an indicator of our future results.

Our historical information provided in this information statement refers to our business as operated by and integrated with bluebird bio. Our historical and pro forma financial information included in this information statement is derived from the consolidated financial statements and accounting records of bluebird bio. Accordingly, the historical and pro forma financial information included in this information statement may not reflect the operating results, financial condition or cash flows that we would have achieved as a separate, publicly traded

company during the periods presented, or the financial results we will achieve in the future. In particular, our future financial results may vary from the historical and pro forma financial information included in this information statement as a result of the following factors, among others:

- our historical combined financial data does not reflect the separation;
- our historical financial data reflects expense allocations for certain support functions that are provided on a centralized basis within bluebird bio, such as expenses for corporate administrative services, including information technology, research and development, finance, legal, insurance, compliance and human resources activities, that may be lower than the comparable expenses we would have actually incurred, or will incur in the future, as a stand-alone company;
- our cost of debt and our capital structure will be different from that reflected in our historical combined financial statements;
- significant increases may occur in our cost structure as a result of becoming a stand-alone public company, including costs related to public company reporting, investor relations and compliance with the Sarbanes-Oxley Act; and
- the separation may have a material effect on our relationships with our suppliers, collaborators and other business relationships.

Our financial condition and future results of operations, after giving effect to the separation, will be materially different from amounts reflected in our historical financial statements included elsewhere in this prospectus. As a result of the separation, it may be difficult for investors to compare our future results to historical results or to evaluate our relative performance or trends in our business.

Further, the unaudited pro forma financial information included in this information statement is presented solely for illustrative and informational purposes and is not necessarily indicative of what 2seventy's actual financial position or results of operations would have been had the separation occurred on the dates described in the unaudited pro forma financial information because it reflects adjustments that were developed using preliminary estimates that management believes are reasonable based on available information and various assumptions. These preliminary estimates may be revised, including as a result of potential adjustments due to bluebird bio's strategic manufacturing collaboration with National Resilience Inc. and other recent events, as additional information becomes available and as additional analyses are performed. Accordingly, the final accounting adjustments may differ materially from the pro forma adjustments reflected in this information statement, which could have a material impact on the pro forma financial information and 2seventy's financial position and future results of operations.

Our ability to operate our business effectively may suffer if we do not, quickly and cost effectively, establish our own administrative and support functions necessary to operate as a stand-alone public company.

In connection with our separation from bluebird bio, we are creating our own financial, administrative, corporate governance, and listed company compliance and other support systems, including for the services bluebird bio had historically provided to us, or expect to contract with third parties to replace bluebird bio systems that we are not establishing internally. We expect this process to be complex, time consuming and costly. In addition, we are also establishing or expanding our own tax, treasury, internal audit, investor relations, corporate governance, and listed company compliance and other corporate functions. These corporate functions fall beyond the scope of the operational service domains formerly provided by bluebird bio and will require us to develop new stand-alone corporate functions. We may need to make significant investments to replicate, or will need to outsource from other providers, these corporate functions to replace these additional corporate services that bluebird bio historically provided us prior to the separation. bluebird bio will continue to provide support for certain of our key business functions after the spin-off for a limited period of time, pursuant to the transition services agreements and certain other agreements we will enter into with bluebird bio. Any failure or significant downtime in our own financial, administrative or other support systems or in the bluebird bio financial, administrative or other support systems during the transitional period in which bluebird bio provides us with support could negatively impact our results of operations or prevent us from paying our suppliers and employees, executing business combinations and foreign

currency transactions or performing administrative or other services on a timely basis, which could negatively affect our results of operations.

Further, as a stand-alone public company, we will incur significant legal, accounting and other expenses that we did not incur as part of bluebird bio. The provisions of SOX, as well as rules subsequently adopted by the SEC and Nasdaq, have imposed various requirements on public companies, including changes in corporate governance practices. For example, SOX requires, among other things, that we maintain and periodically evaluate our internal control over financial reporting and disclosure controls and procedures. In particular, we and our managers will have to perform system and process evaluation and testing of our and their internal control over financial reporting to allow management to report on the effectiveness of our internal control over financial reporting, as required by Section 404 of SOX.

Although bluebird bio has historically tested, and currently tests, its internal controls over financial reporting on a regular basis, we have never done so as a stand-alone entity. Doing so for ourselves will require our management and other personnel to devote a substantial amount of time to comply with these requirements and will also increase our legal and financial compliance costs. In particular, compliance with Section 404 of SOX will require a substantial accounting expense and significant management efforts. We cannot be certain at this time that all of our controls will be considered effective and our internal control over financial reporting may not satisfy the regulatory requirements when they become applicable to us.

The separation may impede our ability to attract and retain key personnel, which could materially harm our business.

Our success depends in large part upon the leadership and performance of our management team and other key employees. Operating as an independent company will demand a significant amount of time and effort from our management and other employees and may give rise to increased employee turnover. If we lose the services of members of our management team or other key employees, we may not be able to successfully manage our business or achieve our business objectives.

Following the separation, we will need to continue to attract and retain qualified key personnel in a highly competitive environment. Our ability to attract, recruit and retain such talent will depend on a number of factors, including the hiring practices of our competitors, the performance of our development programs, our compensation and benefits, work location and work environment and economic conditions affecting our industry generally. If we cannot effectively hire and retain qualified employees, our business, prospects, financial condition and results of operations could suffer.

The separation may result in disruptions to, and harm our relationships with, our strategic business partners.

Uncertainty related to the separation may lead the suppliers, research organizations, and other parties with which we currently do business or may do business in the future to terminate or attempt to negotiate changes in our existing business relationships, or cause them to delay entering into business relationships with us or consider entering into business relationships with parties other than us. These disruptions could have a material and adverse effect on our business, prospects, financial condition and results of operations. The effect of such disruptions could be exacerbated by any delays in the completion of the separation.

If the distribution, together with certain related transactions, does not qualify as a transaction that is generally tax-free for U.S. federal income tax purposes, bluebird bio and its stockholders could be subject to significant tax liabilities, and we could be required to indemnify bluebird bio for material taxes pursuant to indemnification obligations under the tax matters agreement.

It is a condition to the distribution that bluebird bio receive a private letter ruling from the IRS, and an opinion from Goodwin Procter LLP, both satisfactory to bluebird bio's board of directors and both continuing to be valid, together confirming that the distribution, together with certain related transactions, generally is tax-free for U.S. federal income tax purposes under Sections 355 and 368(a)(1)(D) of the Code. bluebird bio has received a favorable private letter ruling from the IRS addressing one significant issue of the qualification of the distribution under Section 355 of the Code. However, the private letter ruling does not address the remaining issues that are relevant to

determining whether the distribution, together with certain related transactions, qualifies as a transaction that is generally tax-free for U.S. federal income tax purposes. The IRS private letter ruling is, and any opinion of Goodwin Procter LLP will be, based, among other things, on various facts and assumptions, as well as certain representations, statements and undertakings from us and bluebird bio (including those relating to the past and future conduct of us and bluebird bio) and will be subject to certain caveats. If any of these facts, assumptions, representations, statements or undertakings is, or becomes, inaccurate or incomplete, or if we or bluebird bio breach any of our respective covenants relating to the separation, the IRS private letter ruling and any tax opinion may be invalid. Accordingly, notwithstanding receipt of the IRS private letter ruling and an opinion of Goodwin Procter LLP, the IRS could determine that the distribution and certain related transactions should be treated as taxable transactions for U.S. federal income tax purposes if it determines that any of the facts, assumptions, representations, statements or undertakings that were included in the request for such IRS private letter ruling or on which any such opinion was based are false or have been violated. In addition, an opinion of Goodwin Procter LLP represents the judgment of Goodwin Procter LLP, which is not binding on the IRS or any court. Accordingly, notwithstanding receipt by bluebird bio of the tax opinion and the IRS private letter ruling referred to above, the IRS could assert that the distribution and certain related transactions do not qualify for tax-free treatment for U.S. federal income tax purposes.

If the distribution, together with certain related transactions, were to fail to qualify as a transaction that is generally tax-free under Sections 355 and 368(a)(1)(D) of the Code, in general, for U.S. federal income tax purposes, bluebird bio would recognize taxable gain as if it has sold our distributed common stock in a taxable sale for its fair market value and bluebird bio stockholders who receive shares of our common stock in the distribution would be subject to tax as if they had received a taxable distribution equal to the fair market value of such shares. For more information and for information regarding the types of investors subject to special rules to whom the above summary may not apply, see "Material U.S. Federal Income Tax Consequences of the Distribution."

In connection with the distribution, we and bluebird bio will enter into a tax matters agreement pursuant to which we will be responsible for certain liabilities and obligations following the distribution. In general, under the terms of the tax matters agreement, if the distribution, together with certain related transactions, were to fail to qualify as a transaction that is generally tax-free, for U.S. federal income tax purposes, under Sections 355 and 368(a)(1)(D) of the Code, and if and to the extent that such failure results from a prohibited change of control in bluebird bio under Section 355(e) of the Code or an acquisition of bluebird bio stock or assets or certain actions, omissions or failures to act, by bluebird bio, then bluebird bio will bear any resulting taxes, interest, penalties and other costs. If and to the extent that such failure results from a prohibited change of control in 2seventy bio under Section 355(e) of the Code or an acquisition of our stock or assets or certain actions by us, then we will indemnify bluebird bio for any resulting taxes, interest, penalties and other costs, including any reductions in bluebird bio's net operating loss carryforwards or other tax assets. If such failure does not result from a prohibited change of control in bluebird bio or 2seventy bio under Section 355(e) of the Code and both we and bluebird bio are responsible for such failure, liability will be shared according to relative fault. If neither we nor bluebird bio is responsible for such failure, bluebird bio will bear any resulting taxes, interest, penalties and other costs. For a discussion of the tax matters agreement, see "Certain Relationships and Related Person Transactions—Agreements with bluebird bio —Tax Matters Agreement." Our indemnification obligations to bluebird bio under the tax matters agreement are not expected to be limited in amount or subject to any cap. If we are required to pay any taxes or indemnify bluebird bio and its subsidiaries and their respective officers and directors under the circumstances set forth in the tax matters agreement, we may be subject to substantial liabilities.

We may not be able to engage in attractive strategic or capital-raising transactions following the separation.

To preserve the tax-free treatment of the separation and the distribution for U.S. federal income tax purposes, for the four-year period beginning two years before and ending two years after the distribution, we will be prohibited under the tax matters agreement, except in specific circumstances, from: (i) entering into or approving any transaction involving the acquisition of outstanding or newly issued 2seventy bio equity that, when combined with other non-excepted changes in ownership of our capital stock, results in a change in ownership of 30% or more; (ii) liquidating or partially liquidating, or merging or consolidating (unless we are the survivor); (iii) making or changing any entity classification election; (iv) ceasing to be engaged in an active trade or business, or selling, transferring or disposing of 25% or more of the assets of any active trade or business; (v) amending any of our

organizational documents or taking any action affecting the voting rights of our capital stock; (vi) redeeming or otherwise repurchasing any of our outstanding stock or options; or (vii) taking or failing to take any other action that would prevent the distribution and certain related transactions from qualifying as a transaction that is generally tax-free for U.S. federal income tax purposes under Sections 355 and 368(a)(1) (D) of the Code. These restrictions may limit for a period of time our ability to pursue certain strategic transactions, equity issuances or repurchases or other transactions that we may believe to be in the best interests of our stockholders or that might increase the value of our business. For more information, see "Certain Relationships and Related Person Transactions—Agreements with bluebird bio—Tax Matters Agreement."

In connection with the separation, we will assume and agree to indemnify bluebird bio for certain liabilities. If we are required to make payments pursuant to these indemnities to bluebird bio, we may need to divert cash to meet those obligations and our financial results could be harmed.

Pursuant to the separation agreement and certain other agreements we intend to enter into with bluebird bio, we will assume and agree to indemnify bluebird bio for certain liabilities for uncapped amounts, which may include, among other items, associated defense costs, settlement amounts and judgments, as discussed further in "Certain Relationships and Related Person Transactions—Agreements with bluebird bio" and "Index to Financial Statements—Audited Combined Financial Statements—Notes to Combined Financial Statements." Payments pursuant to these indemnities may be significant and could harm our business, particularly indemnities relating to our actions that could impact the tax-free nature of the distribution and certain related transactions. Third parties could also seek to hold us responsible for any of the liabilities of the bluebird bio business. bluebird bio will agree to indemnify us for liabilities of the bluebird bio business, but such indemnity from bluebird bio may not be sufficient to protect us against the full amount of such liabilities, and bluebird bio may not fully satisfy its indemnification obligations. Moreover, even if we ultimately succeed in recovering from bluebird bio any amounts for which we are held liable, we may be temporarily required to bear these losses ourselves. Each of these risks could harm our business, prospects, financial condition and results of operations

Our agreements with bluebird bio may not reflect terms that would have resulted from negotiations with unaffiliated third parties.

The agreements related to the separation, including, among others, the separation agreement, the employment matters agreement, the tax matters agreement, the intellectual property license agreement and the transition services agreements, will have been entered into in the context of the separation while we are still controlled by bluebird bio. Until the distribution occurs, bluebird bio will effectively have the sole and absolute discretion to determine and change the terms of the separation, including the terms of any agreements between bluebird bio and us and the establishment of the record date and distribution date. As a result, any changes could be unfavorable to us and may not reflect terms that would have resulted from negotiations between unaffiliated third parties. In addition, bluebird bio may decide at any time not to proceed with all or any part of the separation. For a more detailed description, see "Certain Relationships and Related Person Transactions—Agreements with bluebird bio."

bluebird bio may compete with us.

bluebird bio will not be restricted from competing with us in the development or commercialization of products treating the same indications as our product candidates. Although bluebird bio has informed us it has no current intention to compete with us or our product candidates, if bluebird bio in the future decides to engage in the type of business we conduct, it may have a competitive advantage over us, which may cause our business, prospects, financial condition and results of operations to be materially harmed.

Certain of our directors and officers may have actual or potential conflicts of interest relating to bluebird bio.

Certain of our directors and officers may own shares of bluebird bio common stock or other equity awards as a result of their prior service as bluebird bio directors or officers. For certain of these individuals, their holdings of bluebird bio common stock or equity awards may be significant compared to their total assets. Additionally, Nick Leschly, our chief executive officer, is expected to serve as a director of bluebird bio following the separation. Mr. Leschly's leadership positions at both our company and bluebird bio, as well as the ownership of any bluebird bio equity or equity awards by certain of our directors and officers creates, or may create the appearance of, conflicts of

interest when Mr. Leschly or our other directors or officers are faced with decisions that could have different implications for bluebird bio than for us.

The combined post-separation value of bluebird bio and our common stock may not equal or exceed the pre-separation value of bluebird bio common stock.

As a result of the distribution, bluebird bio expects the trading price of bluebird bio common stock immediately following the distribution to be lower than the trading price of such common stock immediately prior to the distribution because the trading price will no longer reflect the value of our business held by bluebird bio. Furthermore, following the distribution, the trading price of our common stock may not reflect the full value of our business and assets, due to market inefficiencies in the initial trading of our shares or variations in investor views regarding our business and prospects, among other market forces. The aggregate market value of bluebird bio common stock and our common stock following the separation may be higher or lower than the market value of bluebird bio common stock immediately prior to the separation, and may fluctuate, particularly during the period immediately following the distribution.

No vote of bluebird bio stockholders is required in connection with this distribution. As a result, if the distribution occurs and you do not want to receive our common stock in the distribution, your sole recourse will be to divest yourself of your bluebird bio common stock prior to the record date.

No vote of the bluebird bio stockholders is required in connection with the distribution. Accordingly, if the distribution occurs and you do not want to receive our common stock in the distribution, your only recourse will be to divest yourself of your bluebird bio common stock prior to the record date for the distribution.

Risks Related to Ownership of Our Common Stock

There is no existing market for our shares of common stock and an active trading market may not develop for our shares. Once our shares of common stock begin trading, the market price of these shares may fluctuate widely.

There is currently no public market for our shares of common stock. It is anticipated that on or prior to the record date for the distribution, trading of our shares of common stock will begin on a "when issued" basis and will continue up to and including through the distribution date. On the first trading day following the distribution date, any "when issued" trading of our common stock would end and "regular way" trading would begin. However, there can be no assurance that an active trading market for our shares of common stock will develop as a result of the distribution or be sustained in the future.

We cannot predict the prices at which our shares of common stock may trade after the distribution. The market price of our shares of common stock may fluctuate widely, depending upon many factors, some of which are beyond our control, including the following:

- a relatively low-volume trading market for our shares of common stock may result, which could cause trades of small blocks of shares to have a significant impact on the price of our shares of common stock;
- results and timing of preclinical studies and clinical studies of our product candidates;
- the commercial performance of our products, if approved, as well as the costs associated with such activities;
- results of clinical studies of our competitors' products;
- failure to adequately protect our trade secrets;
- our inability to raise additional capital and the terms on which we raise it;
- commencement or termination of any strategic partnership or licensing arrangement;

- regulatory developments with respect to our products or our competitors' products, including any developments, litigation or public concern about the safety of such products;
- announcements concerning product development results, including clinical trial results, the introduction of new products or intellectual property rights of us or others;
- actual or anticipated fluctuations in our financial condition and our quarterly and annual operating results; • deviations in our operating results from any guidance we may provide or the estimates of securities analysts;
- additions and departures of key personnel;
- the passage of legislation or other regulatory developments affecting us or our industry;
- fluctuations in the valuation of companies perceived by investors to be comparable to us;
- sales of our common stock by us, our insiders or our other stockholders;
- strategic decisions by us or our competitors, such as acquisitions, divestitures, spin-offs, joint ventures, strategic investments or changes in business strategy;
- announcement or expectation of additional financing efforts;
- publication of research reports by securities analysts about us or our competitors or our industry and speculation regarding our company or our stock price in the financial or scientific press or in online investor communities;
- changes in market conditions in the pharmaceutical and biotechnology sector; and
- changes in general market and economic conditions.

In addition, if the market for stocks in our industry or industries related to our industry, or the stock market in general, experiences a loss of investor confidence, the trading price of our common stock could decline for reasons unrelated to our business, results of operations, financial condition and prospects. If any of the foregoing occurs, it could cause our stock price to fall and may expose us to lawsuits that, even if unsuccessful, could be costly to defend and a distraction to management.

Substantial sales of shares of our common stock may occur immediately following the distribution which could cause the market price of shares of our common stock to decline.

It is possible that many of bluebird bio's stockholders will sell the shares of our common stock that they receive in the distribution immediately in the public market because our business profile or market capitalization does not fit their investment objectives, because the shares are not included in certain indices or for other reasons. The sale of significant amounts of our shares or the perception in the market that this will occur may result in the lowering of the market price of our shares. We can offer no assurance that bluebird bio's stockholders will continue to hold the shares they receive in the distribution.

The combined post-spin-off value of our shares and the bluebird bio shares may not equal or exceed the aggregate pre-spin-off value of the bluebird bio shares and our shares.

After the spin-off, the bluebird bio shares will continue to be listed and traded on the Nasdaq Global Select Market. Our shares will be traded under the symbol "TSVT" on the Nasdaq Global Select Market. We have no current plans to apply for listing on any additional stock exchanges. As a result of the spin-off, bluebird bio expects the trading prices of bluebird bio shares at market open on the first trading day following completion of the separation and distribution to be lower than the trading prices at market close on the last trading day prior to completion of the separation and distribution, because the trading prices will no longer reflect the value of our business. There can be no assurance that the aggregate market value of the bluebird bio shares and our shares following the spin-off will be higher than, equal to or lower than the market value of the bluebird bio shares if the

spin-off did not occur. This means, for example, that the combined trading prices of one bluebird bio share and one share of our common stock after market open on the first trading day following completion of the separation and distribution may be equal to, greater than or less than the trading price of one bluebird bio share at market close on the last trading day prior to completion of the separation and distribution. In addition, following the close of business on the last trading day prior to completion of the separation and distribution but before the commencement of trading on the first trading day following completion of the separation and distribution, your bluebird bio shares will reflect an ownership interest solely in bluebird bio and will not include the right to receive any of our shares in the spin-off, but may not yet accurately reflect the value of such bluebird bio shares excluding our business.

If securities or industry analysts fail to initiate or maintain coverage of our stock, publish a negative report or change their recommendations regarding our stock adversely, our stock price and trading volume could decline.

The trading market for our common stock will be influenced by the research and reports that industry or securities analysts publish about us, our business, our market or our competitors. If securities or industry analysts fail to initiate coverage of our stock, the lack of exposure to the market could cause our stock price or trading volume to decline. If any of the analysts who cover us or may cover us in the future publish a negative report or change their recommendation regarding our stock adversely, or provide more favorable relative recommendations about our competitors, our stock price would likely decline. If any analyst who covers us or may cover us in the future were to cease coverage of our company or fail to regularly publish reports on us, we could lose visibility in the financial markets, which in turn could cause our stock price or trading volume to decline.

Actual or potential sales of our common stock by our employees, including our executive officers, pursuant to pre-arranged stock trading plans could cause our stock price to fall or prevent it from increasing for numerous reasons, and actual or potential sales by such persons could be viewed negatively by other investors.

In accordance with the guidelines specified under Rule 10b5-1 of the Securities Exchange Act of 1934, as amended, and the policies that we intend to adopt prior to the distribution regarding stock transactions, a number of our employees, including executive officers and members of our board of directors, may adopt stock trading plans pursuant to which they arrange to sell shares of our common stock from time to time in the future. Generally, sales under such plans by our executive officers and directors will require public filings. Actual or potential sales of our common stock by such persons could cause the price of our common stock to fall or prevent it from increasing for numerous reasons.

Future sales and issuances of our common stock or rights to purchase common stock, including pursuant to the equity incentive plans that we intend to adopt prior to the distribution, could result in additional dilution of the percentage ownership of our stockholders and could cause our stock price to fall.

In the future, your percentage ownership in the company may be diluted because of equity issuances for acquisitions, capital market transactions or otherwise, including equity awards that we plan to grant to our directors, officers and employees pursuant to the equity incentive plans that we intend to adopt prior to the distribution. Such awards will have a dilutive effect on our earnings per share, which could adversely affect the market price of our common stock.

In addition, our amended and restated certificate of incorporation will authorize us to issue, without the approval of our stockholders, one or more classes or series of preferred stock having such designation, powers, preferences and relative, participating, optional and other special rights, including preferences over our common stock with respect to dividends and distributions, as our board of directors may determine. The terms of one or more classes or series of preferred stock could dilute the voting power or reduce the value of our common stock. For example, we could grant the holders of preferred stock the right to elect some number of directors in all events or on the happening of specified events or the right to veto specified transactions. Similarly, the repurchase or redemption rights or liquidation preferences we could assign to holders of preferred stock could affect the residual value of the common stock. See "Description of 2seventy bio’s Capital Stock."

We do not expect to pay any cash dividends for the foreseeable future.

We do not anticipate that we will pay any cash dividends to holders of our common stock in the foreseeable future. Instead, we plan to retain any earnings to maintain and expand our operations. In addition, any future debt financing arrangement may contain terms prohibiting or limiting the amount of dividends that may be declared or paid on our common stock. Accordingly, investors must rely on sales of their common stock after price appreciation, which may never occur, as the only way to realize any return on their investment. As a result, investors seeking cash dividends should not purchase our common stock.

Provisions in our amended and restated certificate of incorporation and by-laws, as well as provisions of Delaware law, could make it more difficult for a third party to acquire us or increase the cost of acquiring us, even if doing so would benefit our stockholders or remove our current management.

Our amended and restated certificate of incorporation and amended and restated bylaws will contain, and Delaware law contains, provisions that may have the effect of delaying or preventing a change in control of us or changes in our management. Our amended and restated certificate of incorporation and by-laws, include provisions that:

- authorize “blank check” preferred stock, which could be issued by our board of directors without stockholder approval and may contain voting, liquidation, dividend and other rights superior to our common stock;
- create a classified board of directors whose members serve staggered three-year terms;
- specify that special meetings of our stockholders can be called only by our board of directors, the chairperson of our board of directors, our chief executive officer or our president;
- prohibit stockholder action by written consent;
- establish an advance notice procedure for stockholder approvals to be brought before an annual meeting of our stockholders, including proposed nominations of persons for election to our board of directors;
- provide that our directors may be removed only for cause;
- provide that vacancies on our board of directors may be filled only by a majority of directors then in office, even though less than a quorum;
- specify that no stockholder is permitted to cumulate votes at any election of directors;
- expressly authorize our board of directors to modify, alter or repeal our amended and restated by-laws; and
- require supermajority votes of the holders of our common stock to amend specified provisions of our amended and restated certificate of incorporation and amended and restated by-laws.

These provisions, alone or together, could delay or prevent hostile takeovers and changes in control or changes in our management.

In addition, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, which limits the ability of stockholders owning in excess of 15% of our outstanding voting stock to merge or combine with us.

Any provision of our amended and restated certificate of incorporation or amended and restated by-laws or Delaware law that has the effect of delaying or deterring a change in control could limit the opportunity for our stockholders to receive a premium for their shares of our common stock, and could also affect the price that some investors are willing to pay for our common stock.

Our amended and restated bylaws will designate certain specified courts as the sole and exclusive forums for certain disputes between us and our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers, or employees.

Our amended and restated bylaws will provide that, unless we consent in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware, or the Chancery Court, will be the sole and exclusive forum for state law claims for (i) any derivative action or proceeding brought on our behalf, (ii) any action asserting a claim of, or a claim based on, a breach of a fiduciary duty owed by any of our directors, officers or other employees to us or our stockholders, (iii) any action asserting a claim pursuant to any provision of the Delaware General Corporation Law, our certificate of incorporation or our bylaws, (iv) any action to interpret, apply, enforce or determine the validity of our certificate of incorporation or bylaws, or (v) any action asserting a claim governed by the internal affairs doctrine, or the Delaware Forum Provision. The Delaware Forum Provision does not apply to any causes of action arising under the Securities Act of 1933, as amended, or the Securities Act, or the Exchange Act. Our amended and restated bylaws will further provide that, unless we consent in writing to the selection of an alternative forum, the federal district courts of the United States of America will be the sole and exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act, or the Federal Forum Provision. Our amended and restated bylaws will provide that any person or entity purchasing or otherwise acquiring any interest in shares of our capital stock is deemed to have notice of and consented to the foregoing Delaware Forum Provision and the Federal Forum Provision; provided, however, that stockholders cannot and will not be deemed to have waived our compliance with the federal securities laws and the rules and regulations thereunder.

The Delaware Forum Provision and the Federal Forum Provision may impose additional litigation costs on stockholders in pursuing the claims identified above, particularly if the stockholders do not reside in or near the State of Delaware. Additionally, the Delaware Forum Provision and the Federal Forum Provision may limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or our directors, officers or other employees, which may discourage such lawsuits. In addition, while the Delaware Supreme Court ruled in March 2020 that federal forum selection provisions purporting to require claims under the Securities Act be brought in federal court are "facially valid" under Delaware law, there is uncertainty as to whether other courts will enforce our Federal Forum Provision. If the Federal Forum Provision is found to be unenforceable in an action, we may incur additional costs associated with resolving such an action. The Federal Forum Provision may also impose additional litigation costs on stockholders who assert that the provision is not enforceable or invalid. The Chancery Court or the federal district courts of the United States of America may also reach different judgments or results than would other courts, including courts where a stockholder considering an action may be located or would otherwise choose to bring the action, and such judgments may be more or less favorable to us than our stockholders.

General risks

Changes in tax law could adversely affect our business and financial condition.

The rules dealing with U.S. federal, state, and local income taxation are constantly under review by persons involved in the legislative process and by the Internal Revenue Service and the U.S. Treasury Department. Changes to tax laws (which changes may have retroactive application) could adversely affect us or holders of our common stock. In recent years, many such changes have been made and changes are likely to continue to occur in the future. For example, on March 27, 2020, President Trump signed into law the "Coronavirus Aid, Relief, and Economic Security Act" or the CARES Act, which included certain changes in tax law intended to stimulate the U.S. economy in light of the COVID-19 pandemic, including temporary beneficial changes to the treatment of net operating losses, interest deductibility limitations and payroll tax matters. On December 27, 2020, President Trump signed into law the "Consolidated Appropriations Act", which included additional stimulus relief for the COVID-19 pandemic in the form of modifications to the refundable employee retention credit under the CARES Act and credit extenders, and spending bill for the 2021 fiscal year. Future changes in tax laws could have a material adverse effect on our business, cash flow, financial condition or results of operations. We urge investors to consult with their legal and tax advisers regarding the implications of potential changes in tax laws on an investment in our common stock.

If the estimates we make, or the assumptions on which we rely, in preparing our combined financial statements are incorrect, our actual results may vary from those reflected in our projections and accruals.

Our combined financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America, or GAAP. The preparation of these combined financial statements requires us to make estimates and judgments that affect the reported amounts of our assets, liabilities, revenues and expenses, and related disclosure of contingent assets and liabilities. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable under the circumstances. We cannot assure you, however, that our estimates, or the assumptions underlying them, will be correct.

Further, from time to time we issue financial guidance relating to our expectations for our cash, cash equivalents, and marketable securities available for operations, which guidance is based on estimates and the judgment of management. If, for any reason, our expenses differ materially from our guidance or we utilize our cash more quickly than anticipated, we may have to adjust our publicly announced financial guidance. If we fail to meet, or if we are required to change or update any element of, our publicly disclosed financial guidance or other expectations about our business, our stock price could decline.

CAUTIONARY STATEMENT CONCERNING FORWARD-LOOKING STATEMENTS

This information statement and other materials we have filed or will file with the SEC include, or will include, forward-looking statements. All statements in this information statement, in other materials we have filed or will file with the SEC and in related comments by our management, other than statements of historical facts, including statements about future events, future financial position, business strategy, budgets, projected costs, plans and objectives of management for future operations, are forward-looking statements that involve certain risks and uncertainties. Use of the words "may," "will," "would," "could," "should," "believes," "estimates," "projects," "potential," "expects," "plans," "seeks," "intends," "evaluates," "pursues," "anticipates," "continues," "designs," "impacts," "affects," "forecasts," "target," "outlook," "initiative," "objective," "designed," "priorities," "goal" or the negative of those words or other similar expressions may identify forward-looking statements that represent our current judgment about possible future events, but the absence of these words does not necessarily mean that a statement is not forward-looking.

Forward-looking statements are based on our current expectations and assumptions regarding our business, the economy and other future conditions. Because forward-looking statements relate to the future, by their nature, they are subject to inherent uncertainties, risks and changes in circumstances that are difficult to predict. As a result, our actual results may differ materially from those contemplated by the forward-looking statements. Important factors that could cause actual results to differ materially from those in the forward-looking statements include regional, national or global political, economic, business, competitive, market and regulatory conditions and the following:

- the completion and timing of the separation, the business and operations of 2seventy bio following the separation and any benefits or costs of the separation, including the tax treatment;
- our post-separation relationships with bluebird bio, third parties, collaborators and our employees;
- our ability to operate as a stand-alone company and execute our strategic priorities;
- our ability to finance our operations and business initiatives and obtain funding for such activities;
- the timing, investment and associated activities involved in developing, obtaining regulatory approval for, launching, and commercializing our product candidates;
- our plans with respect to the development, manufacture or sale of our product candidates and the associated timing thereof, including the design and results of pre-clinical and clinical studies;
- the safety profile and related adverse events of our product candidates;
- the efficacy and perceived therapeutic benefits of our product candidates and the potential indications and market opportunities therefor;
- U.S. and foreign regulatory requirements for our product candidates, including any post-approval development and regulatory requirements, and the ability of our product candidates to meet such requirements;
- our ability to attract and retain key employees needed to execute our business plans and strategies and our expectations regarding our ability to manage the impact of any loss of key employees;
- our ability to obtain and maintain intellectual property protection for our product candidates and the strength thereof;
- our future financial performance, revenues, expense levels, payments, cash flows, profitability, tax obligations, capital raising and liquidity sources, real estate needs and concentration of voting control, as well as the timing and drivers thereof, and internal control over financial reporting;
- our ability to compete with other companies that are or may be developing or selling products that are competitive with our product candidates;

- the status of government regulation in the life sciences industry, particularly with respect to healthcare reform;
- potential indemnification liabilities 2seventy bio may owe to bluebird bio after the separation;
- the tax treatment of the distribution and the limitations imposed on 2seventy bio under the tax matters agreement that 2seventy bio will enter into with bluebird bio; and
- trends and challenges in our potential markets.

See “Risk Factors” for a further description of these and other factors. Although we have attempted to identify important risk factors, there may be other risk factors not presently known to us or that we presently believe are not material that could cause actual results and developments to differ materially from those made in or suggested by the forward-looking statements contained in this information statement. If any of these risks materialize, or if any of the above assumptions underlying forward-looking statements prove incorrect, actual results and developments may differ materially from those made in or suggested by the forward-looking statements contained in this information statement. For the reasons described above, we caution you against relying on any forward-looking statements, which should also be read in conjunction with the other cautionary statements that are included elsewhere in this information statement. Any forward-looking statement made by us in this information statement speaks only as of the date thereof. Factors or events that could cause our actual results to differ may emerge from time to time, and it is not possible for us to predict all of them. We undertake no obligation to publicly update or to revise any forward-looking statement, whether as a result of new information, future developments, or otherwise, except as may be required by law.

DIVIDEND POLICY

We currently intend to retain all available funds and any future earnings, if any, to fund the development and expansion of our business and we do not anticipate paying any cash dividends in the foreseeable future. Any future determination to pay dividends will be made at the discretion of our board of directors and will depend on various factors, including applicable laws, our results of operations, financial condition, future prospects and any other factors deemed relevant by our board of directors.

CAPITALIZATION

The following table sets forth 2seventy bio's capitalization as of June 30, 2021 on a historical basis and on a pro forma basis to give effect to the pro forma adjustments included in 2seventy bio's unaudited pro forma combined financial information. The information below is not necessarily indicative of what 2seventy bio's capitalization would have been had the separation and distribution been completed as of June 30, 2021. In addition, it is not indicative of 2seventy bio's future capitalization. This table should be read in conjunction with "Unaudited Pro Forma Combined Financial Statements," "Management's Discussion and Analysis of Financial Condition and Results of Operations," "Summary Historical and Unaudited Pro Forma Combined Financial Information" and the audited combined financial statements and unaudited condensed combined financial statements and corresponding notes included elsewhere in this information statement.

(in thousands)	As of June 30, 2021	
	Actual	Pro Forma
	(unaudited)	
Cash and cash equivalents	$ —	$ 441,200
Debt:		
Long-term debt	$ —	$ —
Total debt	—	—
Equity:		
Common stock	—	2
Additional paid-in capital	—	418,170
Accumulated deficit	—	(1,300)
Net parent investment	48,689	—
Total Capitalization	$ 48,689	$ 416,872

UNAUDITED PRO FORMA COMBINED FINANCIAL STATEMENTS

The unaudited pro forma combined financial data of 2seventy bio consists of unaudited pro forma combined statements of operations for the six months ended June 30, 2021 and for the year ended December 31, 2020 and an unaudited pro forma combined balance sheet as of June 30, 2021 that have been prepared by management in accordance with Article 11, *Pro Forma Financial Information*, under Regulation S-X of the Exchange Act, as amended by the final rule, Release No. 33-10786 "*Amendments to Financial Disclosures about Acquired and Disposed Businesses*," and are for illustrative and informational purposes only. The unaudited pro forma combined financial data reported below should be read in conjunction with "Management's Discussion and Analysis of Financial Condition and Results of Operations," "Summary Historical and Unaudited Pro Forma Combined Financial Information" and the audited combined financial statements and unaudited condensed combined financial statements and corresponding notes included elsewhere in this information statement.

The following unaudited pro forma combined financial data is subject to assumptions and adjustments described in the accompanying notes. 2seventy bio's management believes these assumptions and adjustments are reasonable under the circumstances and given the information available at this time. However, these adjustments are subject to change as bluebird bio and 2seventy bio finalize the terms of the separation, including the separation agreement and related transaction agreements. Additionally, the unaudited pro forma combined financial data is based on preliminary accounting conclusions, which are subject to change. As the unaudited pro forma combined financial data has been prepared based on these preliminary estimates and accounting, the final amounts recorded may differ materially from the information presented.

The unaudited pro forma combined financial data does not purport to represent what 2seventy bio's financial position and results of operations actually would have been had the separation occurred on the dates indicated, or to project 2seventy bio's financial performance for any future period following the separation.

The unaudited pro forma combined statements of operations for the six months ended June 30, 2021 and for the year ended December 31, 2020 give effect to the separation and to bluebird bio's sale of its manufacturing facility as if they had occurred on January 1, 2020. The unaudited pro forma combined balance sheet as of June 30, 2021 gives effect to the separation and to bluebird bio's sale of its manufacturing facility as if they had occurred on June 30, 2021. 2seventy bio's historical financial information, which was the basis for the unaudited pro forma combined financial statements, was prepared on a carve-out basis as 2seventy bio was not operated as a separate, independent company for the periods presented. Accordingly, such historical financial information reflects an allocation for certain business and support functions that are provided on a centralized basis within bluebird bio, including senior management, legal, human resources, finance and information technology. These historical allocations may not be indicative of 2seventy bio's future cost structure and may not necessarily represent the financial position or results of operations of 2seventy bio had it been operated as an independent, separate public company during the periods or at the date presented.

The pro forma adjustments include transaction accounting adjustments that reflect the preliminary accounting for transactions in accordance with U.S. GAAP and autonomous entity adjustments that reflect certain incremental expenses or other changes necessary to reflect the financial condition and results of operations as if 2seventy bio was a separate stand-alone entity. 2seventy bio recorded no income tax expense or benefit in the unaudited pro forma combined financial statements as 2seventy bio maintains a full valuation allowance against its net deferred tax assets. The unaudited pro forma combined financial data includes adjustments to reflect the estimated impact of the following:

- the expected transfer and contribution by bluebird bio to 2seventy bio, pursuant to the separation agreement, of the assets and liabilities that comprise 2seventy bio's business, some of which were not included in 2seventy bio's historical combined financial statements;
- the asset purchase agreement related to the sale in September 2021 of bluebird bio's manufacturing facility ("bRT") located in Durham, North Carolina to National Resilience, Inc. ("Resilience") and the estimated impact on the related assets, liabilities and results of operations of bRT that were historically attributed or allocated to 2seventy bio as well as the estimated impact of the other transaction agreements entered into in

connection with the sale of bRT, including the development and manufacturing services agreement, the license agreement, the transition services agreement and the clinical and commercial supply agreement, which will be attributed to 2seventy bio in connection with the separation;

- the estimated impacts of the separation agreement, tax matters agreement, employee matters agreement, transition services agreements, intellectual property license agreement and other agreements between 2seventy bio and bluebird bio; and
- the distribution of 2seventy bio's common stock by bluebird bio to bluebird bio's shareholders as well as the distribution of pre-funded warrants to purchase shares of 2seventy bio common stock to holders of pre-funded warrants to purchase shares of bluebird bio common stock in connection with the separation.

Pursuant to the terms of the bRT asset purchase agreement, bluebird bio (and, subsequent to the separation, 2seventy bio) agreed to reimburse Resilience for an amount equal to 50% of the net operating losses of and relating to the bRT business incurred during the twelve-month period ending on the first anniversary of the closing of the transaction, as calculated in accordance with the asset purchase agreement, subject to a cap of $15 million. As the actual amount of these reimbursable expenses are not yet estimable, no pro forma adjustment has been recorded.

In connection with the bRT transaction, bluebird bio (and, subsequent to the separation, 2seventy bio) and Resilience also entered into a license agreement that granted Resilience a worldwide, co-exclusive license to intellectual property controlled by bluebird bio (and subsequent to the separation, 2seventy bio) to perform Resilience's obligations and exercise Resilience's rights under the supply agreements and a worldwide, nonexclusive right to offer certain manufacturing services to third party customers. Under the terms of the license agreement, 2seventy bio may receive a high single-digit to low double-digit percentage tiered royalty based on Resilience's gross margins, as defined in the license agreement, for transactions entered into with parties other than bluebird bio (and, subsequent to the separation, 2seventy bio). As the actual amount of these royalty payments to be received is not yet estimable, no pro forma adjustment has been recorded.

2seventy bio

Unaudited Pro Forma Combined Statement of Operations
Six Months Ended June 30, 2021
(in thousands, except per share data)

	2seventy bio As Reported	bRT Adjustments (A)	Subtotal	Transaction Accounting Adjustments	Notes	Autonomous Entity Adjustments	Notes	Pro Forma
Revenue:								
Service revenue	$ 11,232	$ —	$ 11,232	$ —		$ —		$ 11,232
Collaborative arrangement revenue	3,190	—	3,190	—		—		3,190
Royalty and other revenue	4,807	—	4,807	—		—		4,807
Total revenues	19,229	—	19,229	—		—		19,229
Operating expenses:								
Research and development	141,263	1,320	142,583	117	(C)	3,300	(G)	146,000
Selling, general and administrative	46,029	(4,636)	41,393	—		10,400	(G)	51,793
Share of collaboration loss	10,071	—	10,071	—		—		10,071
Cost of royalty and other revenue	1,791	—	1,791	—		—		1,791
Change in fair value of contingent consideration	416	—	416	—		—		416
Total operating expenses	199,570	(3,316)	196,254	117		13,700		210,071
Loss from operations	(180,341)	3,316	(177,025)	(117)		(13,700)		(190,842)
Other income, net	9,103	—	9,103	—		(3,500)	(G)	5,603
Loss before income taxes	(171,238)	3,316	(167,922)	(117)		(17,200)		(185,239)
Income tax (expense) benefit	—	—	—	—		—		—
Net loss	$ (171,238)	$ 3,316	$ (167,922)	$ (117)		$ (17,200)		$ (185,239)
Net loss per share - basic and diluted							(F)	$ (7.70)
Weighted-average number of common shares - basic and diluted							(F)	24,045

See Notes to Unaudited Pro Forma Combined Financial Data.

2seventy bio

Unaudited Pro Forma Combined Statement of Operations
Year Ended December 31, 2020
(in thousands, except per share data)

	2seventy bio As Reported	bRT Adjustments (A)	Subtotal	Transaction Accounting Adjustments	Notes	Autonomous Entity Adjustments	Notes	Pro Forma
Revenue:								
Service revenue	$ 111,452	$ —	$ 111,452	$ —		$ —		$ 111,452
Collaborative arrangement revenue	115,594	—	115,594	—		—		115,594
Royalty and other revenue	21,076	—	21,076	—		—		21,076
Total revenues	248,122	—	248,122	—		—		248,122
Operating expenses:								
Research and development	296,467	(11,530)	284,937	221	(C)	2,800	(G)	287,958
Selling, general and administrative	90,897	(5,469)	85,428	1,300	(D)	16,500	(G)	103,228
Cost of royalty and other revenue	5,396	—	5,396	—		—		5,396
Change in fair value of contingent consideration	(6,468)	—	(6,468)	—		—		(6,468)
Total operating expenses	386,292	(16,999)	369,293	1,521		19,300		390,114
Loss from operations	(138,170)	16,999	(121,171)	(1,521)		(19,300)		(141,992)
Other income, net	18,056	300	18,356	—		(6,200)	(G)	12,156
Loss before income taxes	(120,114)	17,299	(102,815)	(1,521)		(25,500)		(129,836)
Income tax (expense) benefit	—	—	—	—		—		—
Net loss	$ (120,114)	$ 17,299	$ (102,815)	$ (1,521)		$ (25,500)		$ (129,836)
Net loss per share - basic and diluted							(F)	$ (5.40)
Weighted-average number of common shares - basic and diluted							(F)	24,045

See Notes to Unaudited Pro Forma Combined Financial Data.

2seventy bio

Unaudited Pro Forma Combined Balance Sheet
As of June 30, 2021
(in thousands, except per share data)

	2seventy bio As Reported	bRT Adjustments (A)	Subtotal	Transaction Accounting Adjustments	Notes	Autonomous Entity Adjustments	Notes	Pro Forma
Assets:								
Current assets:								
Cash and cash equivalents	$ —	$ —	$ —	$ 448,700	(B, D)	$ (7,500)	(G)	$ 441,200
Prepaid expenses	7,255	(279)	6,976	—		—		6,976
Receivables	11,370	—	11,370	—		—		11,370
Total current assets	18,625	(279)	18,346	448,700		(7,500)		459,546
Property, plant and equipment, net	144,855	(110,907)	33,948	736	(C)	7,500	(G)	42,184
Intangible assets, net	12,127	—	12,127	—		—		12,127
Goodwill	13,128	(1,972)	11,156	—		—		11,156
Operating lease right-of-use assets	109,089	—	109,089	—		—		109,089
Other non-current assets	5,920	—	5,920	30,000	(B)	—		35,920
Total assets	$ 303,744	$ (113,158)	$ 190,586	$ 479,436		$ —		$ 670,022
Liabilities and Equity (Deficit):								
Current liabilities:								
Accounts payable	$ 18,978	$ (1,326)	$ 17,652	$ —		$ —		$ 17,652
Accrued expenses and other current liabilities	61,625	(370)	61,255	—		—		61,255
Operating lease liability, current portion	14,100	—	14,100	—		—		14,100
Collaboration research advancement, current portion	9,080	—	9,080	—		—		9,080
Total current liabilities	103,783	(1,696)	102,087	—		—		102,087
Deferred revenue	25,762	—	25,762	—		—		25,762
Collaboration research advancement, net of current portion	18,547	—	18,547	—		—		18,547
Operating lease liability, net of current portion	104,075	—	104,075	—		—		104,075
Other non-current liabilities	2,888	(209)	2,679	—		—		2,679
Total liabilities	255,055	(1,905)	253,150	—		—		253,150
Equity (deficit):								
Common stock, $0.0001 par value	—	—	—	2	(E)	—		2
Additional paid-in capital	—	—	—	418,170	(B, C, E)	—		418,170
Accumulated deficit	—	—	—	(1,300)	(D)	—		(1,300)
Net parent investment	48,689	(111,253)	(62,564)	62,564	(E)	—		—
Total equity (deficit)	48,689	(111,253)	(62,564)	479,436		—		416,872
Total liabilities and equity (deficit)	$ 303,744	$ (113,158)	$ 190,586	$ 479,436		$ —		$ 670,022

See Notes to Unaudited Pro Forma Combined Financial Data.

Notes to Unaudited Pro Forma Combined Financial Data

1. bRT Adjustments

(A) Reflects the estimated impact of the asset purchase agreement related to bluebird bio's sale of bRT in September 2021 and the related assets, liabilities and results of operations of bRT that were historically attributed or allocated to 2seventy bio in 2seventy bio's historical audited combined financial statements and unaudited condensed combined financial statements as well as the preliminary estimated accounting adjustment to goodwill attributed to bRT based on the estimated relative fair values of bRT and 2seventy bio. In addition, the unaudited pro forma combined statements of operations reflect (i) the impact of estimated development and manufacturing costs 2seventy bio will incur as a result of engaging Resilience to provide such services under the development and manufacturing services agreement and the clinical and commercial supply agreement that will be attributed to 2seventy bio in connection with the separation and (ii) the impact of the transition services agreement entered into by bluebird bio (and, subsequent to the separation, 2seventy bio) and Resilience.

2. Transaction Accounting Adjustments

(B) Reflects the impact of the initial cash contribution of approximately $480 million from bluebird bio to 2seventy bio in connection with the separation, of which $30 million relates to letters of credit issued in connection with 2seventy bio's lease agreements and is classified as restricted cash within other non-current assets.

(C) Reflects the impact of certain property, plant and equipment, net and the related depreciation expense that will be transferred from bluebird bio to 2seventy bio and that were not included in 2seventy bio's historical combined financial statements. There may be additional assets, liabilities or related expenses transferred to 2seventy bio in connection with the separation for which the transfer has not been finalized.

(D) Reflects the impact of estimated nonrecurring transaction costs of $1.3 million expected to be incurred by 2seventy bio in connection with the separation but that were not yet incurred and, therefore, not included in 2seventy bio's historical combined financial statements.

(E) Reflects the distribution of 2seventy bio common stock to bluebird bio stockholders, calculated based on 69,862,379 shares of bluebird bio common stock outstanding on September 27, 2021, and a distribution ratio of one share of 2seventy bio common stock for every three shares of bluebird bio common stock. This amount is a reclassification of bluebird bio's investment in 2seventy bio that is allocated between common stock and additional paid-in capital based on the number of shares of 2seventy bio common stock outstanding on the distribution date.

(F) The number of shares of 2seventy bio common stock used to compute basic earnings per share is based on (i) the number of shares of 2seventy bio common stock assumed to be outstanding on the distribution date, after giving effect to the distribution, calculated based on 69,862,379 shares of bluebird bio common stock outstanding on September 27, 2021, and a distribution ratio of one share of 2seventy bio common stock for every three shares of bluebird bio common stock and (ii) pre-funded warrants to purchase 757,575 shares of 2seventy bio common stock assumed to be outstanding on the distribution date, after giving effect to the distribution, calculated based on pre-funded warrants to purchase 2,272,727 shares of bluebird bio common stock outstanding on September 27, 2021, and a distribution ratio of one share of 2seventy bio common stock for every three shares of bluebird bio common stock, as the exercise price of the pre-funded warrants requires little or no consideration for the delivery of shares of common stock. In periods in which 2seventy bio reports a net loss, diluted net loss per share is the same as basic net loss per share since the inclusion of common stock equivalents such as options and restricted stock awards would be anti-dilutive.

3. Autonomous Entity Adjustments

(G) As an independent, standalone, public company following the separation, 2seventy bio expects to incur certain additional costs, including accounting, auditing, communications, tax, legal, employee benefits, human resources, information technology and other general and administrative functions, from those reflected in the historical combined financial statements. 2seventy bio estimates that the net impact of these incremental costs, including the net impact of any costs or other income related to the separation agreement, employee matters

agreement, transition services agreements, intellectual property license agreement and other transaction-related agreements, as compared to its historical combined financial statements, would have been incremental expense of approximately $17.2 million and $25.5 million for the six months ended June 30, 2021 and for the year ended December 31, 2020, respectively, as well as incremental capital expenditures of approximately $7.5 million to establish information technology infrastructure. Accordingly, the pro forma combined financial statements have been adjusted to depict 2seventy bio as an autonomous entity. The additional costs have been based on estimates 2seventy bio believes are reasonable. However, actual incremental costs that will be incurred could differ materially from these estimates.

MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion of our financial condition and results of operations should be read in conjunction with "Unaudited Pro Forma Combined Financial Statements," "Summary Historical and Unaudited Pro Forma Combined Financial Information" and the audited combined financial statements and unaudited condensed combined financial statements and corresponding notes included elsewhere in this information statement.

In addition to historical information, this report contains forward-looking statements that involve risks and uncertainties which may cause our actual results to differ materially from plans and results discussed in forward-looking statements. We encourage you to review the risks and uncertainties discussed in the sections captioned "Risk Factors" and "Forward-Looking Statements", included elsewhere in this information statement. The risks and uncertainties can cause actual results to differ significantly from those forecast in forward-looking statements or implied in historical results and trends.

We caution readers not to place undue reliance on any forward-looking statements made by us, which speak only as of the date they are made. We disclaim any obligation, except as specifically required by law and the rules of the SEC, to publicly update or revise any such statements to reflect any change in our expectations or in events, conditions or circumstances on which any such statements may be based, or that may affect the likelihood that actual results will differ from those set forth in the forward-looking statements.

Overview

2seventy bio is a cell and gene therapy company focused on the research, development, and commercialization of transformative treatments for cancer. We were incorporated in April 2021 and are led by an accomplished team with significant expertise and experience in this field, from discovery through clinical development to regulatory approval of Abecma (idecabtagene vicleucel; ide-cel). Our approach combines our expertise in T cell engineering technology and lentiviral vector gene delivery approaches, experience in research, development, and manufacturing of cell therapies and a suite of technologies that can be selectively deployed to develop highly innovative, targeted cellular therapies for patients with cancer. We are advancing multiple preclinical and clinical programs in oncology and, together with our partner, delivering Abecma to multiple myeloma patients in the United States following approval by the FDA of Abecma in March 2021 for the treatment of adults with multiple myeloma who have received at least four prior lines of therapy, including an immunomodulatory agent, a proteasome inhibitor and an anti-CD38 monoclonal antibody.

Separation from bluebird bio, Inc.

In January 2021, bluebird bio announced its plans to separate its oncology portfolio and programs from its severe genetic disease, or SGD, portfolio and programs through a pro rata distribution of our common stock to stockholders of bluebird bio. As a part of the separation, bluebird bio intends to transfer the assets, liabilities and operations of its oncology portfolio and programs to us, pursuant to the terms of a separation agreement to be entered into between us and bluebird bio. On the distribution date, each bluebird bio stockholder will receive one share of our common stock for every three shares of bluebird bio common stock held of record at the close of business on the record date for the distribution. Registered stockholders will receive cash in lieu of any fractional shares of our common stock that they would have received as a result of the application of the distribution ratio. Following the distribution, we will operate as a separate, independent, publicly traded company. The distribution of our common stock as described in this information statement is subject to the satisfaction or waiver by bluebird bio of certain conditions. For a more detailed description of these conditions, see the section of this information statement captioned "The Separation and Distribution—Conditions to the Distribution."

Our historical financial statements have been prepared on a carve-out basis and are derived from bluebird bio's consolidated financial statements and accounting records. Our financial statements are presented in conformity with generally accepted accounting principles in the United States, or GAAP. See Note 2, *Summary of significant accounting policies and basis of presentation*, in the notes to the audited combined financial statements and unaudited condensed combined financial statements appearing elsewhere in this information statement for additional information on the preparation and basis of presentation of the combined financial statements. Our financial

position, results of operations and cash flows historically operated, and will continue to operate, as part of bluebird bio's financial position, results of operations and cash flows prior to and until the distribution of our common stock to bluebird bio's stockholders. The historical combined financial statements may not be indicative of our future performance and do not necessarily reflect what our combined results of operations, financial condition and cash flows would have been had we operated as a separate, publicly traded company during the periods presented. We expect that changes will occur in our operating structure and our capitalization as a result of the separation from bluebird bio. See the section of this information statement captioned "The Separation and Distribution" for additional detail.

Financial Operations Overview

Revenue

To date, we have not recognized any revenues from the sale of products. Our revenues have been derived from collaboration arrangements and out-licensing arrangements.

Revenue recognized under collaborative arrangements has been generated primarily from a collaboration arrangement with BMS that will be attributed to us in connection with the separation. The terms of the BMS collaboration arrangement with respect to ide-cel contain multiple promised goods or services, which included at inception: (i) research and development services, (ii) a license to ide-cel, and (iii) manufacture of vectors and associated payload for incorporation into ide-cel under the license. As of September 2017, the BMS collaboration also included the following promised goods or services with respect to bb21217: (i) research and development services, (ii) a license to bb21217, and (iii) manufacture of vectors and associated payload for incorporation into bb21217 under the license. An agreement was entered into with BMS to co-develop and co-promote ide-cel in March 2018, which was subsequently amended in May 2020, as part of which both parties will share equally in U.S. costs and profits. Revenue from our collaborative arrangements is recognized as the underlying performance obligations are satisfied.

We analyze our collaboration arrangements to assess whether they are within the scope of ASC 808, *Collaborative Arrangements* ("ASC 808"), which includes determining whether such arrangements involve joint operating activities performed by parties that are both active participants in the activities and exposed to significant risks and rewards dependent on the commercial success of such activities. This assessment is performed throughout the life of the arrangement based on changes in the responsibilities of all parties in the arrangement. For collaboration arrangements within the scope of ASC 808 that contain multiple elements, we first determine which elements of the collaboration are deemed to be within the scope of ASC 808 and those that are more reflective of a vendor-customer relationship and therefore within the scope of ASC 606, *Revenue from Contracts with Customers* ("Topic 606" or "ASC 606"). For those elements of the arrangement that are accounted for pursuant to Topic 606, we apply the five-step model prescribed in Topic 606. For elements of collaboration arrangements that are accounted for pursuant to ASC 808, an appropriate recognition method is determined and applied consistently, generally by analogy to Topic 606. In arrangements where we do not deem our collaborator to be our customer, payments to and from our collaborator are presented in the combined statements of operations and comprehensive loss based on the nature of the payments, as summarized in the table and further described below.

Nature of Payment	Statement of Operations Presentation
Our share of profits in connection with commercialization of products	Collaborative arrangement revenue
Our share of losses in connection with commercialization of products	Share of collaboration loss
Net reimbursement of our research and development expenses	Collaborative arrangement revenue
Net reimbursement of the collaborator's research and development expenses	Research and development expense

Where the collaborator is the principal in the product sales, we recognize our share of any profits or losses, representing net product sales less cost of goods sold and shared commercial and other expenses, in the period in which such underlying sales occur and costs are incurred by the collaborator. We also recognize our share of costs

arising from research and development activities performed by collaborators in the period our collaborators incur such expenses.

Effective January 1, 2020, we adopted Accounting Standards Update ("ASU") No. 2018-18, *Collaborative Arrangements (Topic 808): Clarifying the Interaction between Topic 808 and Topic 606* ("ASU 2018-18") on a retrospective basis. As a result, prior periods are presented in accordance with the new standard. As we recognize revenue under our collaborative arrangements both within and outside the scope of Topic 606, we present revenue on our combined statements of operations and comprehensive income (loss) as follows: service revenue includes revenue from collaborative partners recognized within the scope of Topic 606 and collaborative arrangement revenue includes only revenue from collaborative partners recognized outside the scope of Topic 606.

Nonrefundable license fees are recognized as revenue upon delivery of the license provided there are no unsatisfied performance obligations in the arrangement. License revenue has historically been generated from out-license agreements, under which we may also recognize revenue from potential future milestone payments and royalties.

For arrangements with licenses of intellectual property that include sales-based royalties, including milestone payments based on the level of sales, and the license is deemed to be the predominant item to which the royalties relate, we recognize revenue at the later of (i) when the related sales occur, or (ii) when the performance obligation to which the royalty has been allocated has been satisfied.

Research and Development Expenses

Research and development expenses consist primarily of costs incurred for the development of our product candidates, which include:

- employee-related expenses, including salaries, benefits, travel and stock-based compensation expense;
- expenses incurred under agreements with clinical research organizations (“CROs”) and clinical sites that conduct our clinical studies;
- reimbursable costs to our partners for collaborative activities;
- facilities, depreciation, and other expenses, which include direct and allocated expenses for rent and maintenance of facilities, information technology, insurance, and other supplies in support of research and development activities;
- costs associated with our research platform and preclinical activities;
- milestones and upfront license payments;
- costs associated with our regulatory, quality assurance and quality control operations; and
- amortization of certain intangible assets.

Research and development costs are expensed as incurred. Costs for certain development activities are recognized based on an evaluation of the progress to completion of specific tasks using information and data provided to us by our vendors and our clinical sites. We cannot determine with certainty the duration and completion costs of the current or future clinical studies of our product candidates or if, when, or to what extent we will generate revenues from the commercialization and sale of any of our product candidates that obtain regulatory approval. We may not succeed in achieving regulatory approval for all of our product candidates. The duration, costs, and timing of clinical studies and development of our product candidates will depend on a variety of factors, any of which could mean a significant change in the costs and timing associated with the development of our product candidates including:

- the scope, rate of progress, and expense of our ongoing as well as any additional clinical studies and other research and development activities we undertake;

- future clinical study results;
- uncertainties in clinical study enrollment rates;
- new manufacturing processes or protocols that we may choose to or be required to implement in the manufacture of our lentiviral vector or drug product;
- regulatory feedback on requirements for regulatory approval, as well as changing standards for regulatory approval; and
- the timing and receipt of any regulatory approvals.

We plan to increase our research and development expenses for the foreseeable future as we continue to conduct research and development activities and fund our share of the costs of development of Abecma and bb21217 (if we exercise our option to co-develop and co-commercialize this product candidate) in collaboration with BMS. We currently expect we will exercise our option to co-develop and co-promote bb21217 within the United States. Our research and development expenses include expenses associated with the following activities:

- CRB-401 study – an open label, single-arm, multi-center, phase 1 study to examine the safety and efficacy of ide-cel in the treatment of patients with relapsed and refractory multiple myeloma.
- KarMMA study – an open label, single-arm, multi-center phase 2 study to examine the efficacy and safety of ide-cel in the treatment of patients with relapsed and refractory multiple myeloma.
- KarMMa-2 study – a multi-cohort, open-label, multicenter phase 2 study to examine the safety and efficacy of ide-cel in the treatment of patients with relapsed and refractory multiple myeloma and in high-risk multiple myeloma.
- KarMMa-3 study – a multicenter, randomized, open-label phase 3 study comparing the efficacy and safety of ide-cel versus standard triplet regimens in patients with relapsed and refractory multiple myeloma.
- KarMMa-4 study – a multi-cohort, open-label, multicenter phase 1 study intended to determine the optimal target dose and safety of ide-cel in subjects with newly-diagnosed multiple myeloma.
- CRB-402 study – an open label, single-arm, multicenter, phase 1 study to examine the safety and efficacy of the bb21217 product candidate in the treatment of patients with relapsed and refractory multiple myeloma.
- We will continue to incur costs related to the manufacture of clinical study materials in support of our clinical studies.

We expect that the timing of investment in our ongoing clinical studies will reflect COVID-19 related delays in these studies.

Our direct research and development expenses consist principally of external costs, such as fees paid to investigators, consultants, central laboratories and CROs in connection with our clinical studies, and costs related to acquiring and manufacturing clinical study materials. We allocate salary and benefit costs directly related to specific programs. We do not allocate personnel-related discretionary bonus or stock-based compensation costs, laboratory and related expenses, certain license and other collaboration costs, depreciation or other indirect costs that are

deployed across multiple projects under development and, as such, the costs are separately classified as other research and development expenses in the table below:

	Six months ended June 30,		Year ended December 31,		
	2021	2020	2020	2019	2018
ide-cel	$ 45,572	$ 52,241	$ 105,240	$ 121,182	$ 75,667
bb21217	4,612	13,026	23,511	19,827	15,624
Preclinical programs	24,168	27,170	52,778	48,505	50,115
Total direct research and development expense	74,352	92,437	181,529	189,514	141,406
Employee- and contractor-related expenses	17,697	11,436	22,008	21,128	12,820
Stock-based compensation expense	16,906	16,849	30,935	33,853	21,846
Laboratory and related expenses	4,804	1,190	2,292	2,721	831
License and other collaboration expenses	2,344	10,058	12,089	4,333	3,726
Facility expenses	24,615	22,759	46,402	44,661	18,948
Other expenses	545	603	1,212	1,435	913
Total other research and development expenses	66,911	62,895	114,938	108,131	59,084
Total research and development expense	$ 141,263	$ 155,332	$ 296,467	$ 297,645	$ 200,490

Selling, General and Administrative Expenses

Selling, general and administrative expenses consist primarily of salaries and related costs for personnel, including stock-based compensation and travel expenses for our employees in executive, operational, finance, legal, business development, commercial, information technology, and human resource functions. Other selling, general and administrative expenses include facility-related costs, professional fees for accounting, tax, legal and consulting services, directors' fees and expenses associated with obtaining and maintaining patents.

Share of Collaboration Loss

Share of collaboration loss represents our share of net loss arising from product sales less cost of goods sold and shared commercial costs and other expenses related to the commercialization of a product where the collaborator is the principal in the product sales.

Cost of Royalty and Other Revenue

Cost of royalty and other revenue represents expenses associated with amounts owed to third-party licensors as a result of revenue recognized under our out-license arrangements.

Change in Fair Value of Contingent Consideration

On June 30, 2014, bluebird bio acquired Pregenen. All assets and liabilities related to the Pregenen acquisition, including the resulting intangible assets, goodwill and contingent consideration, will be attributed to us in connection with the separation. The agreement provided for up to $135.0 million in future contingent cash payments upon the achievement of certain preclinical, clinical and commercial milestones related to the Pregenen technology.

As of December 31, 2020, there were $120.0 million in future contingent cash payments, of which $20.1 million relates to clinical milestones and $99.9 million relates to commercial milestones. We estimate future contingent cash payments have a fair value of $1.5 million as of December 31, 2020, which are classified within other non-current liabilities on our combined balance sheet.

As of June 30, 2021, there were $99.9 million in future contingent cash payments related to commercial milestones. We estimate future contingent cash payments have a fair value of $1.9 million as of June 30, 2021, which are classified within other non-current liabilities on our condensed combined balance sheet.

Interest Expense

For the year ended December 31, 2018, interest expense consisted primarily of the financing lease obligation for our headquarters at 60 Binney Street in Cambridge, Massachusetts. Upon adoption of ASU 2016-02, *Leases (Topic 842)*, on January 1, 2019, we de-recognized the financing lease obligation and, as a result, no longer recognize interest expense associated with the financing lease obligation.

Other Income, Net

Other income, net consists primarily of income resulting from the allocation of facility-related, depreciation and amortization expense to bluebird bio for its proportional use of assets that will be attributed to us, as well as expense resulting from the allocation of facility-related, depreciation and amortization expense to us for our proportional use of assets that will not be attributed to us. Other income, net also includes immaterial rental income and gains and losses on disposal of assets.

Critical Accounting Policies and Significant Judgments and Estimates

Our management's discussion and analysis of our financial condition and results of operations are based on our combined financial statements, which have been prepared in accordance with generally accepted accounting principles in the United States. The preparation of these financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, and expenses and the disclosure of contingent assets and liabilities in our financial statements. Estimates and judgments are used in the following areas, among others: allocations of revenue, expenses, assets and liabilities from bluebird bio's historical consolidated financial statements to us, future undiscounted cash flows and subsequent fair value estimates used to assess potential and measure any impairment of long-lived assets, including goodwill and intangible assets, the measurement of right-of-use assets and lease liabilities, contingent consideration, stock-based compensation expense, accrued expenses, income taxes, and the assessment of our ability to fund operations for at least the next twelve months from the date of issuance of our combined financial statements. On an ongoing basis, we evaluate our estimates and judgments, including expected business and operational changes, sensitivity and volatility associated with the assumptions used in developing estimates, and whether historical trends are expected to be representative of future trends. We base our estimates on historical experience, known trends and events and various other factors that are believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions. In making estimates and judgments, management employs critical accounting policies. During the six months ended June 30, 2021, there were no material changes to our significant accounting policies as reported in our annual combined financial statements, except as otherwise described in Note 2, *Basis of presentation, principles of consolidation and significant accounting policies*, in the notes to the unaudited condensed combined financial statements.

While our significant accounting policies are described in more detail in the notes to our audited combined financial statements and unaudited condensed combined financial statements appearing elsewhere in this information statement, we believe the following accounting policies to be most critical to the judgments and estimates used in the preparation of our financial statements.

Revenue Recognition

Revenue Recognition

Under Topic 606, *Revenue from Contracts with Customers*, an entity recognizes revenue when its customer obtains control of promised goods or services, in an amount that reflects the consideration that the entity expects to receive in exchange for those goods or services. To determine revenue recognition for arrangements that an entity determines are within the scope of Topic 606, the entity performs the following five steps: (i) identify the contract(s)

with a customer; (ii) identify the performance obligations in the contract; (iii) determine the transaction price, including variable consideration, if any; (iv) allocate the transaction price to the performance obligations in the contract; and (v) recognize revenue when (or as) the entity satisfies a performance obligation. We only apply the five-step model to contracts when it is probable that the entity will collect the consideration to which it is entitled in exchange for the goods or services it transfers to the customer.

Once a contract is determined to be within the scope of Topic 606, we assess the goods or services promised within each contract and determine those that are performance obligations. Arrangements that include rights to additional goods or services that are exercisable at a customer's discretion are generally considered options. We assess if these options provide a material right to the customer and if so, they are considered performance obligations. The identification of material rights requires judgments related to the determination of the value of the underlying license relative to the option exercise price, including assumptions about technical feasibility and the probability of developing a candidate that would be subject to the option rights. The exercise of a material right is accounted for as a contract modification for accounting purposes.

We assess whether each promised good or service is distinct for the purpose of identifying the performance obligations in the contract. This assessment involves subjective determinations and requires management to make judgments about the individual promised goods or services and whether such are separable from the other aspects of the contractual relationship. Promised goods and services are considered distinct provided that: (i) the customer can benefit from the good or service either on its own or together with other resources that are readily available to the customer (that is, the good or service is capable of being distinct) and (ii) the entity's promise to transfer the good or service to the customer is separately identifiable from other promises in the contract (that is, the promise to transfer the good or service is distinct within the context of the contract). In assessing whether a promised good or service is distinct, we consider factors such as the research, manufacturing and commercialization capabilities of the collaboration partner and the availability of the associated expertise in the general marketplace. We also consider the intended benefit of the contract in assessing whether a promised good or service is separately identifiable from other promises in the contract. If a promised good or service is not distinct, an entity is required to combine that good or service with other promised goods or services until it identifies a bundle of goods or services that is distinct.

The transaction price is then determined and allocated to the identified performance obligations in proportion to their stand-alone selling prices ("SSP") on a relative SSP basis. SSP is determined at contract inception and is not updated to reflect changes between contract inception and when the performance obligations are satisfied. Determining the SSP for performance obligations requires significant judgment. In developing the SSP for a performance obligation, we consider applicable market conditions and relevant entity-specific factors, including factors that were contemplated in negotiating the agreement with the customer and estimated costs. We validate the SSP for performance obligations by evaluating whether changes in the key assumptions used to determine the SSP will have a significant effect on the allocation of arrangement consideration between multiple performance obligations.

If the consideration promised in a contract includes a variable amount, we estimate the amount of consideration to which we will be entitled in exchange for transferring the promised goods or services to a customer. We determine the amount of variable consideration by using the expected value method or the most likely amount method. We include the unconstrained amount of estimated variable consideration in the transaction price. The amount included in the transaction price is constrained to the amount for which it is probable that a significant reversal of cumulative revenue recognized will not occur. At the end of each subsequent reporting period, we re-evaluate the estimated variable consideration included in the transaction price and any related constraint, and if necessary, adjust our estimate of the overall transaction price. Any such adjustments are recorded on a cumulative catch-up basis in the period of adjustment.

If an arrangement includes development and regulatory milestone payments, we evaluate whether the milestones are considered probable of being reached and estimate the amount to be included in the transaction price using the most likely amount method. If it is probable that a significant revenue reversal would not occur, the associated milestone value is included in the transaction price. Milestone payments that are not within our control or the licensee's control, such as regulatory approvals, are generally not considered probable of being achieved until those approvals are received.

For arrangements with licenses of intellectual property that include sales-based royalties, including milestone payments based on the level of sales, and the license is deemed to be the predominant item to which the royalties relate, we recognize royalty revenue and sales-based milestones at the later of (i) when the related sales occur, or (ii) when the performance obligation to which the royalty has been allocated has been satisfied.

In determining the transaction price, we adjust consideration for the effects of the time value of money if the timing of payments provides us with a significant benefit of financing. We do not assess whether a contract has a significant financing component if the expectation at contract inception is such that the period between payment by the licensees and the transfer of the promised goods or services to the licensees will be one year or less. We assessed each of our revenue generating arrangements in order to determine whether a significant financing component exists and concluded that a significant financing component does not exist in any of our arrangements.

We then recognize as revenue the amount of the transaction price that is allocated to the respective performance obligation when (or as) each performance obligation is satisfied, either at a point in time or over time, and if over time recognition is based on the use of an output or input method.

We recognize revenue within the following financial statement captions:

Service Revenue

To date, our service revenue has primarily been generated from the elements of the collaboration arrangement with BMS that are accounted for pursuant to Topic 606, using the five-step model described above. As discussed further in *Collaborative arrangement revenue* below, we analyze our collaboration arrangements to assess whether they are within the scope of ASC 808, *Collaborative Arrangements* ("ASC 808") or Topic 606. For the elements of the arrangement which are more reflective of a vendor-customer relationship and therefore within the scope of Topic 606, we record the related revenue as service revenue on the combined statement of operations and comprehensive income (loss). Refer to *—Collaborative arrangement revenue* below for additional discussion around our policy for recognizing collaborative arrangement revenue and the determination of whether elements of a collaboration arrangement are within the scope of ASC 808 or Topic 606.

Collaborative Arrangement Revenue

To date, collaborative arrangement revenue has been primarily generated from the collaboration arrangements with BMS and Regeneron Pharmaceuticals, Inc. ("Regeneron"), as further described in Note 8, *Collaborative arrangements*, in the notes to our audited combined financial statements and unaudited condensed combined financial statements appearing elsewhere in this information statement. Refer to *—Financial Operations Overview—Revenue* above.

The recognition of service revenue and collaborative arrangement revenue (expense) require management judgment due to the fact that the terms of our collaboration arrangements are complicated and the nature of the collaborative activities change over time. This process includes the identification of costs that we incur that relate to each particular collaboration arrangement, evaluating the nature of these costs (for example, whether the costs relate to a particular geography or territory or whether the costs relate to clinical or commercial activities), and applying the terms of the respective collaborative arrangement to determine the portion of such costs that are the responsibility of the collaboration partner, which in certain circumstances requires significant judgment.

Leases

Effective January 1, 2019, we adopted ASU 2016-02, *Leases (Topic 842)*, ("ASU 2016-02" or "ASC 842"), using the required modified retrospective approach and utilizing the effective date as the date of initial application. As a result, prior periods are presented in accordance with the previous guidance in ASC 840, *Leases* ("ASC 840").

At the inception of an arrangement, we determine whether the arrangement is or contains a lease based on the relevant facts and circumstances present in the arrangement. Leases with a term greater than one year are recognized on the balance sheet as right-of-use assets and short-term and long-term lease liabilities, as applicable. We do not have material financing leases.

Operating lease liabilities and their corresponding right-of-use assets are initially recorded based on the present value of lease payments over the expected remaining lease term. Certain adjustments to the right-of-use asset may be required for items such as incentives received. The interest rate implicit in lease contracts is typically not readily determinable. As a result, we utilize our incremental borrowing rate to discount lease payments, which reflects the fixed rate at which we could borrow on a collateralized basis the amount of the lease payments in the same currency, for a similar term, in a similar economic environment. To estimate our incremental borrowing rate, a credit rating applicable to us is estimated using a synthetic credit rating analysis since we do not currently have a rating agency-based credit rating.

We have elected not to recognize leases with an original term of one year or less on the balance sheet. We typically only includes an initial lease term in our assessment of a lease arrangement. Options to renew a lease are not included in our assessment unless there is reasonable certainty that we will renew.

Assumptions that we made at the commencement date are re-evaluated upon occurrence of certain events, including a lease modification. A lease modification results in a separate contract when the modification grants the lessee an additional right of use not included in the original lease and when lease payments increase commensurate with the stand-alone price for the additional right of use. When a lease modification results in a separate contract, it is accounted for in the same manner as a new lease.

ASC 842 Transition Practical Expedients and Application of Transition Provisions to Leases at the Transition Date

We elected the following practical expedients, which must be elected as a package and applied consistently to all of our leases at the transition date (including those for which we are a lessee or a lessor): i) we did not reassess whether any expired or existing contracts are or contain leases; ii) we did not reassess the lease classification for any expired or existing leases (that is, all existing leases that were classified as operating leases in accordance with ASC 840 are classified as operating leases, and all existing leases that were classified as capital leases in accordance with ASC 840 are classified as finance leases); and iii) we did not reassess initial direct costs for any existing leases.

For leases that existed prior to the date of initial application of ASC 842 (which were previously classified as operating leases), a lessee may elect to use either the total lease term measured at lease inception under ASC 840 or the remaining lease term as of the date of initial application of ASC 842 in determining the period for which to measure its incremental borrowing rate. In transition to ASC 842, we utilized the remaining lease term of its leases in determining the appropriate incremental borrowing rates.

Application of ASC 842 Policy Elections to Leases Post Adoption

We have made certain policy elections to apply to our leases executed post adoption, or subsequent to January 1, 2019, as further described below.

In accordance with ASC 842, components of a lease should be split into three categories: lease components, non-lease components, and non-components. The fixed and in-substance fixed contract consideration (including any consideration related to non-components) must be allocated based on the respective relative fair values to the lease components and non-lease components.

Entities may elect not to separate lease and non-lease components. Rather, entities would account for each lease component and related non-lease component together as a single lease component. We have elected to account for lease and non-lease components together as a single lease component for all underlying assets and allocate all of the contract consideration to the lease component only.

ASC 842 allows for the use of judgment in determining whether the assumed lease term is for a major part of the remaining economic life of the underlying asset and whether the present value of lease payments represents substantially all of the fair value of the underlying asset. We apply the bright line thresholds referenced in ASC 842-10-55-2 to assist in evaluating leases for appropriate classification. The aforementioned bright lines are applied consistently to our entire portfolio of leases.

Accrued Research and Development Expenses

As part of the process of preparing our financial statements, we are required to estimate our accrued expenses. This process involves reviewing open contracts and purchase orders, communicating with our personnel to identify services that have been performed on our behalf and estimating the level of service performed and the associated cost incurred for the service when we have not yet been invoiced or otherwise notified of the actual cost. The majority of our service providers invoice us monthly in arrears for services performed or when contractual milestones are met. We make estimates of our accrued expenses as of each balance sheet date in our financial statements based on facts and circumstances known to us at that time.

We recognize expenses related to clinical studies based on our estimates of the services received and efforts expended pursuant to contracts with multiple CROs that conduct and manage clinical studies on our behalf. The financial terms of these agreements are subject to negotiation, vary from contract to contract and may result in uneven payment flows. There may be instances in which payments made to our vendors will exceed the level of services provided and result in a prepayment of the clinical expense. Payments under some of these contracts depend on factors such as the successful enrollment of subjects and the completion of clinical study milestones. In accruing service fees, we estimate the time period over which services will be performed and the level of effort to be expended in each period and adjust accordingly.

Other examples of estimated accrued research and development expenses include fees paid to:

- collaboration partners for research performed in connection with ongoing collaboration arrangements;
- investigative sites in connection with clinical studies;
- vendors in connection with preclinical development activities; and
- vendors related to the development, manufacturing, and distribution of clinical trial materials.

Recent Accounting Pronouncements

See Note 2, *Summary of significant accounting policies and basis of presentation*, in the notes to the audited combined financial statements and in the notes to the unaudited condensed combined financial statements appearing elsewhere in this information statement for a description of recent accounting pronouncements applicable to our business.

Results of Operations

Historically, our operations have been managed in the normal course of business as part of bluebird bio. Accordingly, certain shared costs have been allocated to us and reflected as expenses in the stand-alone combined financial statements, as described in greater detail in the notes to the combined financial statements appearing elsewhere in this information statement. We considered the allocation methodologies used to be a reasonable and appropriate reflection of the historical bluebird bio expenses attributable to us for purposes of the stand-alone financial statements. The expenses reflected in the combined financial statements may not be indicative of expenses that will be incurred by us in the future. The following discussion summarizes the key factors we believe are necessary for an understanding of our combined financial statements.

Comparison of the Six Months Ended June 30, 2021 and 2020:

	Six months ended June 30,		
	2021	2020	Change
	(in thousands)		
Revenue:			
Service revenue	$ 11,232	$ 94,219	$ (82,987)
Collaborative arrangement revenue	3,190	111,976	(108,786)
Royalty and other revenue	4,807	13,587	(8,780)
Total revenues	19,229	219,782	(200,553)
Operating expenses:			
Research and development	141,263	155,332	(14,069)
Selling, general and administrative	46,029	46,847	(818)
Share of collaboration loss	10,071	—	10,071
Cost of royalty and other revenue	1,791	2,579	(788)
Change in fair value of contingent consideration	416	(4,763)	5,179
Total operating expenses	199,570	199,995	(425)
(Loss) income from operations	(180,341)	19,787	(200,128)
Other income, net	9,103	8,973	130
(Loss) income before income taxes	(171,238)	28,760	(199,998)
Income tax (expense) benefit	—	—	—
Net (loss) income	$ (171,238)	$ 28,760	$ (199,998)

Revenue. Total revenue was $19.2 million for the six months ended June 30, 2021, compared to $219.8 million for the six months ended June 30, 2020. The decrease of $200.6 million was primarily attributable to a cumulative catch-up adjustment to revenue recorded in connection with the May 2020 BMS contract modification in the second quarter of 2020.

Research and Development Expenses. Research and development expenses were $141.3 million for the six months ended June 30, 2021, compared to $155.3 million for the six months ended June 30, 2020. The overall decrease of $14.1 million was primarily attributable to the following:

- $33.2 million of decreased manufacturing-related expenditures was primarily attributable to decreased drug product and vector manufacturing costs driven mainly by the timing of manufacturing activities relating to ABECMA and the assignment of our manufacturing supply agreement in relation to the ABECMA program to BMS in May 2020;
- $8.5 million of decreased license and milestone fees due to sublicense payments made to a third party licensor in the second quarter of 2020. In current period, the milestone payments associated with the commercial launch of ide-cel were capitalized as intangible assets;
- $2.2 million of decreased clinical trial costs and activities leading to the commercial launch ABECMA; and
- $1.9 million of decreased IT and other facility-related costs.

These decreased costs were partially offset by:

- $25.9 million of increased collaboration research funding costs, which represents our share of research and development costs under our collaboration with BMS. The increase is also attributable to our recognition of collaborative arrangement revenue rather than collaboration expense associated with research and development activities in the second quarter of 2020 as a result of the May 2020 contract modification with BMS; and

- $6.9 million of increased employee compensation, benefit, and other headcount related expenses, primarily driven by our employee retention program which commenced during the first quarter of 2021.

Selling, General and Administrative Expenses. Selling, general and administrative expenses were $46.0 million for the six months ended June 30, 2021, compared to $46.8 million for the six months ended June 30, 2020. The decrease of $0.8 million was primarily due to a $4.3 million decrease in stock-based compensation expense driven by the rollout of the annual employee equity bonus plan in 2020. The decrease was partially offset by:

- $2.2 million of increased costs related to the non-equity component of employee compensation, benefit, retention bonus and other headcount related expense; and
- $1.3 million of increased IT and other facility-related costs.

Share of Collaboration Loss. Share of collaboration loss represents our share of net loss arising from the commercialization of ide-cel, under the BMS collaboration. BMS is the principal seller in the sales of ide-cel. BMS received marketing approval in the United States for ide-cel in March 2021 and recognized gross product revenue from sales of ide-cel of $24.3 million in the second quarter of 2021.

Cost of Royalty and Other Revenue. Cost of royalty and other revenue was $1.8 million for the six months ended June 30, 2021, compared to $2.6 million for the six months ended June 30, 2020. The decrease is attributable to decreased other revenue in the same periods.

Change in Fair Value of Contingent Consideration. The change in fair value of contingent consideration was primarily due to the change in significant unobservable inputs used in the fair value measurement of contingent consideration, including the probabilities of successful achievement of clinical and commercial milestones and discount rates.

Other Income, Net. The increase in other income, net was primarily related to an increase of $0.7 million in other income resulting from the allocation of facility-related and depreciation expense to bluebird bio for its proportional use of assets that will be attributed to us and an increase of $0.7 million in rental income, partially offset by an increase of $1.2 million in other expense resulting from the allocation of facility-related and depreciation expense to us for our proportional use of bluebird bio assets.

Comparison of the Years Ended December 31, 2020 and 2019:

	Year ended December 31,		
	2020	2019	Change
	(in thousands)		
Revenue:			
Service revenue	$ 111,452	$ 30,351	$ 81,101
Collaborative arrangement revenue	115,594	5,740	109,854
Royalty and other revenue	21,076	8,205	12,871
Total revenues	248,122	44,296	203,826
Operating expenses:			
Research and development	296,467	297,645	(1,178)
Selling, general and administrative	90,897	81,646	9,251
Cost of royalty and other revenue	5,396	2,978	2,418
Change in fair value of contingent consideration	(6,468)	2,747	(9,215)
Total operating expenses	386,292	385,016	1,276
Loss from operations	(138,170)	(340,720)	202,550
Other income, net	18,056	20,126	(2,070)
Loss before income taxes	(120,114)	(320,594)	200,480
Income tax (expense) benefit	—	—	—
Net loss	$ (120,114)	$ (320,594)	$ 200,480

Revenue. Total revenue was $248.1 million for the year ended December 31, 2020, compared to $44.3 million for the year ended December 31, 2019. The increase of $203.8 million was primarily attributable to a cumulative catch-up adjustment to revenue recorded in connection with the May 2020 BMS contract modification, as well as an increase in royalty and other revenue primarily attributable to revenue recognized under an out-license agreement.

Research and Development Expenses. Research and development expenses were $296.5 million for the year ended December 31, 2020, compared to $297.6 million for the year ended December 31, 2019. The decrease of $1.2 million was primarily attributable to $26.5 million of decreased material production and other platform costs, primarily due to BMS assuming the contract manufacturing agreements relating to ide-cel adherent lentiviral vector under the May 2020 contract modification.

These decreased costs were partially offset by the following increases:

- $14.0 million of increased collaboration research funding costs, primarily due to an increase in collaboration costs incurred by BMS, of which we pay a portion, as a result of BMS assuming the contract manufacturing agreements relating to ide-cel adherent lentiviral vector under the May 2020 contract modification;
- $7.3 million of increased license and milestone fees;
- $3.2 million of increased consulting fees; and
- $1.5 million of increased research and development related IT and facility-related costs.

Selling, General and Administrative Expenses. Selling, general and administrative expenses were $90.9 million for the year ended December 31, 2020, compared to $81.6 million for the year ended December 31, 2019. The increase of $9.3 million was primarily due to the following:

- $7.5 million of increased employee compensation, benefit, and other headcount related expenses, which is primarily driven by an increase in headcount to support overall growth, including an increase of $1.9 million in stock-based compensation expense;

- $2.6 million of increased IT and facility-related costs; and
- $1.8 million of increased costs related to commercial activities.

These increased costs were partially offset by a $2.4 million decrease in consulting costs.

Cost of Royalty and Other Revenue. Cost of royalty and other revenue was $5.4 million for the year ended December 31, 2020, compared to $3.0 million for the year ended December 31, 2019. The increase is attributable to increased royalty revenue in the same periods.

Change in Fair Value of Contingent Consideration. The change in fair value of contingent consideration was primarily due to the change in significant unobservable inputs used in the fair value measurement of contingent consideration, including the probabilities of successful achievement of clinical and commercial milestones and discount rates.

Other Income, Net. The decrease in other income, net was primarily related to a decrease of $2.3 million in other income resulting from the allocation of facility-related and depreciation expense to bluebird bio for its proportional use of assets that will be attributed to us.

Comparison of the Years Ended December 31, 2019 and 2018:

	Year ended December 31,		
	2019	2018	Change
	(in thousands)		
Revenue:			
Service revenue	$ 30,351	$ 44,533	$ (14,182)
Collaborative arrangement revenue	5,740	7,820	(2,080)
Royalty and other revenue	8,205	2,226	5,979
Total revenues	44,296	54,579	(10,283)
Operating expenses:			
Research and development	297,645	200,490	97,155
Selling, general and administrative	81,646	53,631	28,015
Cost of royalty and other revenue	2,978	885	2,093
Change in fair value of contingent consideration	2,747	2,999	(252)
Total operating expenses	385,016	258,005	127,011
Loss from operations	(340,720)	(203,426)	(137,294)
Interest expense	—	(15,486)	15,486
Other income, net	20,126	19,163	963
Loss before income taxes	(320,594)	(199,749)	(120,845)
Income tax benefit (expense)	—	—	—
Net loss	$ (320,594)	$ (199,749)	$ (120,845)

Revenue. Total revenue was $44.3 million for the year ended December 31, 2019, compared to $54.6 million for the year ended December 31, 2018. The decrease of $10.3 million was primarily attributable to a decrease in service revenue recognized for the ide-cel license and manufacturing services under the BMS agreement. This decrease was partially offset by an increase in royalty and other revenue.

Research and Development Expenses. Research and development expenses were $297.6 million for the year ended December 31, 2019, compared to $200.5 million for the year ended December 31, 2018. The increase of $97.2 million was primarily attributable to the following:

- $32.0 million of increased laboratory expenses, material production, and other platform costs;

- $30.9 million of increased employee compensation, benefit, and other headcount related expenses, which is primarily driven by an increase in research and development headcount to support overall growth, including an increase of $12.0 million in stock-based compensation expense;
- $26.3 million of increased collaboration research funding costs;
- $25.9 million of increased research and development related IT and facility related costs, which includes the impact of adopting ASU 2016-02; and
- $1.7 million of increased consulting and market research costs.

These increased costs were partially offset by $18.3 million of decreased license and milestone fees and $1.5 million of decreased clinical trial costs.

Selling, General and Administrative Expenses. Selling, general and administrative expenses were $81.6 million for the year ended December 31, 2019, compared to $53.6 million for the year ended December 31, 2018. The increase of $28.0 million was primarily due to the following:

- $21.1 million of increased employee compensation, benefit, and other headcount related expenses, which is primarily driven by an increase in selling, general, and administrative headcount to support overall growth, including an increase of $9.2 million in stock-based compensation expense;
- $5.0 million of increased consulting fees;
- $1.2 million of increased IT and facility related costs; and
- $0.8 million of increased costs related to commercial-readiness activities.

Cost of Royalty and Other Revenue. Cost of royalty and other revenue was $3.0 million for the year ended December 31, 2019, compared to $0.9 million for the year ended December 31, 2018. The increase is attributable to increased royalty revenue in the same periods.

Change in Fair Value of Contingent Consideration. The change in fair value of contingent consideration was primarily due to the change in significant unobservable inputs used in the fair value measurement of contingent consideration, including the probabilities of successful achievement of clinical and commercial milestones and discount rates.

Interest Expense. The decrease in interest expense was due to the de-recognition of the financing lease obligation associated with our corporate headquarters at 60 Binney Street related to the adoption of ASU 2016-02 on January 1, 2019.

Other Income, Net. The increase in other income, net was primarily related to $2.6 million in additional income resulting from the allocation of facility-related expense to bluebird bio for its proportional use of assets that will be attributed to us, partially offset by a decrease of $0.9 million in other income resulting from the allocation of depreciation expense to bluebird bio for its proportional use of equipment that will be attributed to us and an increase of $0.7 million in other expense resulting from the allocation of facility-related and depreciation expense to us for our proportional use of bluebird bio assets.

Liquidity and Capital Resources

We have historically participated in bluebird bio's centralized approach to cash management, and, therefore, there were no cash amounts specifically attributable to us for the historical periods presented. Historically, the primary source of liquidity for our business was cash flow allocated to us from bluebird bio. Prior to separation, transfers of cash to and from bluebird bio have been reflected in net parent investment in the historical combined balance sheets, statements of cash flows and statements of equity. We have not reported cash or cash equivalents for the periods presented in the combined balance sheets. We expect bluebird bio to continue to fund our cash needs through the date of the separation.

Going Concern

Our ability to fund our operations and capital needs will depend on our ongoing ability to generate cash from operations and access to capital markets and other sources of capital, as further described below. We have incurred losses and have experienced negative operating cash flows for all historical annual periods presented as well as for the six months ended June 30, 2021. During the six months ended June 30, 2021, we incurred a loss of $171.2 million and used $106.2 million of cash in operations. During the year ended December 31, 2020, we incurred a loss of $120.1 million and used $67.8 million of cash in operations. As bluebird bio manages our cash and financing arrangements, excess cash generated, if any, is deemed remitted to bluebird bio and all sources of cash are deemed funded by bluebird bio. We expect to continue to generate operating losses and negative operating cash flows for the next few years. Our continued operations are dependent on our ability to raise additional funding. If we are unable to obtain additional funding on a timely basis, we may be forced to significantly curtail, delay, or discontinue one or more of our planned research or development programs or be unable to expand our operations. Based on our recurring losses from operations incurred, expectation of continuing operating losses for the next few years, and the need to raise additional funding to finance our future operations, as of September 9, 2021, the issuance date of the unaudited condensed combined financial statements for the six months ended June 30, 2021, we have concluded that there is substantial doubt about our ability to continue as a going concern for a period of one year from the date that our condensed combined financial statements were issued. See Note 1, *Description of the business*, to our unaudited condensed combined financial statements appearing elsewhere in this information statement.

Similarly, for the year ended December 31, 2020, we concluded that there was substantial doubt about our ability to continue as a going concern for a period of one year from the date that our audited combined financial statements were issued. See Note 1, *Description of the business*, to our audited combined financial statements appearing elsewhere in this information statement.

Cash Flows

The following table summarizes our cash flow activity:

	Six months ended June 30,		Year ended December 31,		
	2021	2020	2020	2019	2018
			(in thousands)		
Net cash (used in) provided by operating activities	$ (106,245)	$ 48,948	$ (67,793)	$ (207,957)	$ (146,215)
Net cash used in investing activities	(9,976)	(11,590)	(22,261)	(59,765)	(50,827)
Net cash provided by (used in) financing activities	116,221	(37,358)	90,054	267,722	197,042
Increase (decrease) in cash, cash equivalents and restricted cash	$ —	$ —	$ —	$ —	$ —

Operating Activities. Net cash used in operating activities was $106.2 million for the six months ended June 30, 2021 and primarily consisted of a net loss of $171.2 million adjusted for non-cash items, including stock-based compensation of $29.1 million, depreciation and amortization of $8.1 million, and the change in fair value of the contingent consideration of $0.4 million, as well as the change in our net working capital.

Net cash provided by operating activities was $48.9 million for the six months ended June 30, 2020 and primarily consisted of net income of $28.8 million adjusted for non-cash items, including stock-based compensation of $33.3 million, depreciation and amortization of $6.5 million, and the change in fair value of the contingent consideration of $4.8 million, as well as the change in our net working capital.

Net cash used in operating activities was $67.8 million for the year ended December 31, 2020 and primarily consisted of a net loss of $120.1 million adjusted for non-cash items, including stock-based compensation of $61.0 million, depreciation and amortization of $13.2 million, and the change in fair value of the contingent consideration of $6.5 million, as well as the change in our net working capital.

Net cash used in operating activities was $208.0 million for the year ended December 31, 2019 and primarily consisted of a net loss of $320.6 million adjusted for non-cash items, including stock-based compensation of $62.0 million, depreciation and amortization of $12.6 million, and the change in fair value of the contingent consideration of $2.7 million, as well as the change in our net working capital.

Net cash used in operating activities was $146.2 million for the year ended December 31, 2018 and primarily consisted of a net loss of $199.7 million adjusted for non-cash items, including stock-based compensation of $40.8 million, depreciation and amortization of $13.3 million, and the change in fair value of the contingent consideration of $3.0 million, as well as the change in our net working capital.

Investing Activities. Net cash used in investing activities for the six months ended June 30, 2021 was $10.0 million and was due to the purchase of property, plant and equipment of $8.0 million as well as the purchase of intangible assets of $2.0 million.

Net cash used in investing activities for the six months ended June 30, 2020 was $11.6 million and was due to the purchase of property, plant and equipment.

Net cash used in investing activities for the year ended December 31, 2020 was $22.3 million and was due to the purchase of property, plant and equipment.

Net cash used in investing activities for the year ended December 31, 2019 was $59.8 million and was due to the purchase of property, plant and equipment.

Net cash used in investing activities for the year ended December 31, 2018 was $50.8 million and was due to the purchase of property, plant and equipment.

Financing Activities. As bluebird bio manages our cash and financing arrangements, all excess cash generated through earnings is deemed remitted to bluebird bio and all sources of cash are deemed funded by bluebird bio.

Net cash provided by financing activities for the six months ended June 30, 2021 was $116.2 million and was due to cash transferred to us from bluebird bio based on changes in our cash used for operating and investing activities.

Net cash used in financing activities for the six months ended June 30, 2020 was $37.4 million and was due to cash transferred to bluebird bio from us based on changes in our cash provided by operating activities and our cash used for investing activities.

Net cash provided by financing activities for the year ended December 31, 2020 was $90.1 million and was due to cash transferred to us from bluebird bio based on changes in our cash used for operating and investing activities.

Net cash provided by financing activities for the year ended December 31, 2019 was $267.7 million and was due to cash transferred to us from bluebird bio based on changes in our cash used for operating and investing activities.

Net cash provided by financing activities for the year ended December 31, 2018 was $197.0 million and was primarily due to cash transferred to us from bluebird bio based on changes in our cash used for operating and investing activities.

Funding Requirements

We expect our expenses to increase in connection with our ongoing activities, particularly as we advance the preclinical activities and clinical trials of our product candidates. In addition, following the distribution, we expect to incur additional costs associated with operating as a public company. Our expenses will also increase as we:

- leverage our programs to continue advancing our product candidates into preclinical and clinical development;
- seek regulatory approvals for any product candidates that successfully complete clinical trials;

- hire additional clinical, quality control and scientific personnel;
- expand our operational, financial and management systems and increase personnel, including personnel to support our clinical development and our operations as a public company; and
- maintain, expand and protect our intellectual property portfolio.

We believe that our initial cash capitalization following the completion of the separation will enable us to fund our operating expenses and capital expenditure requirements for at least 12 months following the completion of the separation. We have based this estimate on assumptions that may prove to be wrong, and we could exhaust our available capital resources sooner than we expect.

Because of the numerous risks and uncertainties associated with research, development and commercialization of product candidates, we are unable to estimate the exact amount of our working capital requirements. The scope of our future funding requirements will depend on, and could increase significantly as a result of, many factors, including:

- the scope, progress, results and costs of researching and developing our product candidates, and conducting preclinical studies and clinical trials;
- the costs, timing and outcome of regulatory review of our product candidates;
- the costs of future activities, including medical affairs, manufacturing and distribution, for any of our product candidates for which we receive marketing approval;
- the cost and timing of hiring new employees to support our continued growth;
- the cost of establishing sales, marketing and distribution capabilities for any products for which we may receive regulatory approval;
- the costs of preparing, filing and prosecuting patent applications, maintaining and enforcing our intellectual property rights and defending intellectual property-related claims; and
- the timing, receipt and amount of sales of, or milestone payments related to or royalties on, our current or future product candidates, if any.

A change in the outcome of any of these or other variables with respect to the development of any of our product candidates could significantly change the costs and timing associated with the development of that product candidate. Further, our operating plans may change in the future, and we may need additional funds to meet operational needs and capital requirements associated with such operating plans.

Until such time, if ever, as we can generate substantial product revenue, we expect to finance our cash needs through a combination of public or private equity offerings, debt financings, collaborations, strategic alliances or licensing arrangements with third parties. To the extent that we raise additional capital through the sale of equity or convertible debt securities, your ownership interest may be materially diluted, and the terms of such securities could include liquidation or other preferences that adversely affect your rights as a common stockholder. Debt financing and preferred equity financing, if available, may involve agreements that include restrictive covenants that limit our ability to take specified actions, such as incurring additional debt, making capital expenditures or declaring dividends. In addition, debt financing would result in increased fixed payment obligations.

If we raise funds through collaborations, strategic alliances or licensing arrangements with third parties, we may have to relinquish valuable rights to our technologies, future revenue streams, research programs or product candidates or grant licenses on terms that may not be favorable to us.

If we are unable to raise additional funds when needed, we may be required to delay, reduce or eliminate our product development or future commercialization efforts, or grant rights to develop and market product candidates that we would otherwise prefer to develop and market ourselves.

Contractual Obligations and Commitments

Lease Commitments

60 Binney Street Lease

In September 2015, bluebird bio entered into a lease agreement, which will be attributed to us in connection with the separation, for office and laboratory space located at 60 Binney Street, Cambridge, Massachusetts. Under the terms of the lease, starting on October 1, 2016, we leased approximately 253,108 square feet of office and laboratory space at $72.50 per square foot per year, or $18.4 million per year in base rent, which is subject to scheduled annual rent increases of 1.75% plus certain operating expenses and taxes. bluebird bio currently maintains a $13.8 million collateralized letter of credit and, subject to the terms of the lease and certain reduction requirements specified therein, including market capitalization requirements, this amount may decrease to $9.2 million over time. The lease will continue until March 31, 2027. Pursuant to a work letter entered into in connection with the lease, the landlord contributed an aggregate of $42.4 million toward the cost of construction and tenant improvements for the building.

Seattle, Washington Leases

In July 2018, bluebird bio entered into a lease agreement for office and laboratory space located in a portion of a building in Seattle, Washington. This lease will be attributed to us in connection with the separation. The lease was amended in October 2018 to increase the total rentable space to approximately 36,126 square feet at $54.00 per square foot in base rent per year, which is subject to scheduled annual rent increases of 2.5% plus certain operating expenses and taxes. The lease commenced on January 1, 2019 and the lease term will continue through January 31, 2027. We moved into the facility in June 2019. The lease allowed for a tenant improvement allowance of up to $215.00 per square foot, or approximately $8.0 million. We utilized the $8.0 million tenant improvement allowance and it has been fully reimbursed by the landlord as of December 31, 2020.

In September 2019, we entered into a second amendment to the lease (the “Second Amendment”). The Second Amendment added approximately 22,188 square feet to the existing space and extended the lease term of the entire premises by 16 months, or until April 2028. Fixed monthly rent for the expanded space will be incurred at a rate of $62.80 per square foot per year beginning in January 2021, subject to annual increases of 2.5%. The Second Amendment includes a five-year option to extend the term. In September 2020, bluebird bio entered into a sublease agreement for the 22,188 square feet added under the Second Amendment at a fixed monthly rent of $62.80 per square foot per year beginning in January 2021, subject to annual increases of 2.5%. The sublease term will continue through April 2028.

Contingent Consideration Related to Business Combinations

In connection with the Pregenen acquisition, bluebird bio agreed to make contingent cash payments to the former equityholders of Pregenen. All assets and liabilities related to the Pregenen acquisition, including the resulting goodwill and contingent consideration, will be attributed to us in connection with the separation. In accordance with accounting guidance for business combinations, these contingent cash payments are recorded as a component of other non-current liabilities on our combined balance sheets at fair value. During the second quarter of 2017, a $5.0 million preclinical milestone was achieved, which resulted in a $5.0 million payment to the former equityholders of Pregenen during the third quarter of 2017. As of December 31, 2020, and 2019, $1.5 million and $8.0 million, respectively, is reflected as a non-current liability in the combined balance sheets, which represents the fair value of our contingent consideration obligations as of that date. As of June 30, 2021, the aggregate remaining undiscounted amount of contingent consideration potentially payable is $99.9 million. As of June 30, 2021, $1.9 million is reflected as a non-current liability in the condensed combined balance sheet, which represents the fair value of our contingent consideration obligations as of that date.

Contingent Milestone and Royalty Payments

We also have obligations to make future payments to third parties that become due and payable on the achievement of certain development, regulatory and commercial milestones (such as the start of a clinical trial, filing

of a BLA, approval by the FDA or product launch). We do not recognize these commitments in our financial statements until they become payable or have been paid.

Based on our development plans as of December 31, 2020 and June 30, 2021, we may be obligated to make future development, regulatory and commercial milestone payments and royalty payments on future sales of specified products associated with our collaboration and license agreements. Payments under these agreements generally become due and payable upon achievement of such milestones or sales. Because the achievement of these milestones or sales had not occurred as of December 31, 2020 or June 30, 2021, such contingencies have not been recorded in our financial statements. Amounts related to contingent milestone payments and sales-based royalties are not yet considered contractual obligations as they are contingent upon success.

- Under a license agreement with Biogen Inc., which will be attributed to us in the separation, pursuant to which we license certain patents and patent applications related to our ide-cel and bb21217 product candidates, we will be required to make certain payments related to certain development milestone obligations and must report on our progress in achieving these milestones on a periodic basis. We may be obligated to pay up to $23.0 million in the aggregate for each licensed product upon the achievement of remaining milestones. Upon commercialization of our products covered by the in-licensed intellectual property, we will be obligated to pay a percentage of net sales as a royalty in the low single digits.

- Under a license agreement with the National Institutes of Health, or NIH, which will be attributed to us in the separation, pursuant to which we license certain patent applications related to our ide-cel and bb21217 product candidates, we have agreed to certain development and regulatory milestone obligations and must report on our progress in achieving these milestones on a periodic basis. We may be obligated to pay up to $9.7 million in the aggregate for a licensed product upon the achievement of these milestones. Upon commercialization of our products covered by the in-licensed intellectual property, we will be obligated to pay NIH a percentage of net sales as a royalty in the low single digits. The royalties payable under this license agreement are subject to reduction for any third-party payments required to be made, with a minimum floor in the low single digits. During the year ended December 31, 2020, we paid NIH $1.0 million upon milestones reached for a product covered by in-licensed intellectual property.

- Under a license and collaboration agreement with Gritstone Oncology Inc., or Gritstone, which will be attributed to us in the separation, we may utilize Gritstone's proprietary technology platform to identify and validate tumor-specific targets, among other activities under our research plan. We may be obligated to pay up to $129.0 million in the aggregate per therapy product and $27.5 million in the aggregate per target product for development, regulatory, and commercial milestones as well as low single-digit tiered royalty payments based on annual net sales.

- Under a license and collaboration agreement with Inhibrx, Inc., or Inhibrx, which will be attributed to us in the separation, we will research, develop and commercialize chimeric antigen receptor (CAR) T cell therapies using Inhibrx's proprietary single domain antibody (sdAb) platform to multiple cancer targets. We may be obligated to pay up to $51.5 million in the aggregate per target for development, regulatory, and commercial milestones as well as mid single-digit tiered royalty payments based on annual net sales.

Transition From bluebird bio and Costs to Operate as an Independent Company

The combined financial statements reflect our operating results and financial position as it was operated by bluebird bio, rather than as an independent company. We will incur additional ongoing operating expenses to operate as an independent company. These costs will include the cost of various corporate headquarters functions, incremental information technology-related costs and incremental costs to operate stand-alone accounting, legal and other administrative functions. We will also incur non-recurring expenses and non-recurring capital expenditures.

As an independent company, our information technology operating costs may be higher than the costs allocated in the historical combined financial statements. In addition, we will incur non-recurring expenses and capital expenditures to establish independent information technology systems.

We are currently building our accounting and other administrative infrastructure. We expect to enter into a transition services agreement with bluebird bio that will provide us with certain services and resources related to corporate functions for an initial term of two years. This transition services agreement will allow us to operate our business independently prior to establishing stand-alone infrastructure. During the transition from bluebird bio, we will incur non-recurring expenses to expand our infrastructure.

It is not practicable to estimate the costs that would have been incurred in each of the periods presented in the historical financial statements for the functions described above. Actual costs that would have been incurred if we operated as a stand-alone company during these periods would have depended on various factors, including organizational design, outsourcing and other strategic decisions related to corporate functions, information technology and back office infrastructure.

Transactions with Related and Certain Other Parties

Prior to or concurrently with the distribution, we expect to enter into certain agreements with bluebird bio resulting from and relating to the separation, including a separation agreement, transition services agreements, a tax matters agreement, an intellectual property license agreement and an employee matters agreement. The terms of these agreements, including information on the business purpose of such agreements, transaction prices, related ongoing contractual commitments and any related special risks or contingencies are discussed in greater detail in the section captioned "Certain Relationships and Related Party Transactions", appearing elsewhere in this information statement.

Off-Balance Sheet Arrangements

As of December 31, 2020 and June 30, 2021, we did not have any off-balance sheet arrangements as defined in the rules and regulations of the SEC.

Emerging Growth Company Status

The Jumpstart Our Business Startups Act of 2012 permits an “emerging growth company” such as us to take advantage of an extended transition period to comply with new or revised accounting standards applicable to public companies until those standards would otherwise apply to private companies. We have elected not to “opt out” of such extended transition period, which means that when a standard is issued or revised and it has different application dates for public or private companies, we will adopt the new or revised standard at the time private companies adopt the new or revised standard and will do so until such time that we either (i) irrevocably elect to “opt out” of such extended transition period or (ii) no longer qualify as an emerging growth company. We may choose to early adopt any new or revised accounting standards whenever such early adoption is permitted for private companies.

BUSINESS

Overview

2seventy bio is a cell and gene therapy company focused on the research, development, and commercialization of transformative treatments for cancer. We are led by an accomplished team with significant expertise and experience in this field, from discovery through clinical development to regulatory approval of Abecma (idecabtagene vicleucel, or ide-cel), the first FDA-approved CAR T cell therapy for multiple myeloma. Our approach combines our expertise in T cell engineering technology and lentiviral vector gene delivery approaches, experience in research, development, and manufacturing of cell therapies and a suite of technologies that can be selectively deployed to develop highly innovative, targeted cellular therapies for patients with cancer. We are advancing multiple preclinical and clinical programs in oncology and, together with our partner Bristol-Myers Squibb (BMS), delivering Abecma to multiple myeloma patients in the United States following approval by the FDA of Abecma in March 2021 for the treatment of adults with multiple myeloma who have received at least four prior lines of therapy, including an immunomodulatory agent, a proteasome inhibitor and an anti-CD38 monoclonal antibody.

In recent years, growing understanding of cancer cell metabolism and genomics, as well as of the body's immune response to tumor cells, has led to the development of new classes of therapies against cancer targets and pathways that have dramatically reshaped the treatment landscape. The advent of immunotherapy, particularly engineered cell therapies, has offered the potential of moving past the treatment paradigm of maintenance of cancer as a "chronic" disease. However, there remain few curative therapies and, in some settings such as solid tumors, current approaches do not offer significant depth or durability of outcome for most cancer types and patients. Monotherapies have historically been of limited efficacy in cancer, and drugs are typically combined to deliver an outsized effect relative to the action of any of the individual components. One potential advantage of combination therapies is the ability to address the heterogeneity of single target expression and/or mechanisms for relapse and resistance specific to a particular mechanism or target.

While medicines such as Abecma have highlighted the power of first-generation CAR T cell therapy by achieving previously unobtainable levels of efficacy in the late line setting, we believe that to be broadly successful in the treatment of cancer, a combination therapy approach is necessary, and that our multiplex approach to next-generation autologous cellular therapy, which allows multiple encoded mechanisms of action to be delivered within a single drug product, represents an attractive solution. Based on our experience in the research and development of Abecma, we believe we can develop next-generation, engineered cell therapies to bring new options to patients suffering from a broad range of different tumor types.

In designing our next-generation product candidates, we aim to address the limitations of first-generation T cell therapies by augmenting them with additional technologies. These limitations include: (1) targeting a single tumor-associated antigen that may be lost or down regulated; (2) heterogeneous target expression resulting in the sparing of tumor cells devoid of antigen; and/or (3) expression of immunosuppressive molecules such as TGFβ or PDL-1 in the tumor microenvironment.

Our Approach

Our approach is to create multiplex engineered cell therapies by combining: (1) CAR and T cell receptor technology, which programs T cells to recognize and kill cancer cells based on the cell surface expression or presentation of intracellular protein targets, respectively; (2) dual-targeting CAR architecture for multi-target tumor cell recognition; (3) our core lentiviral gene transfer technology which delivers these genetic cargos (and more) to program a patient's own T cells to the kill the cancer cells; (4) our megaTAL-based gene editing technology which allows us to perform site specific gene addition or deletion from the genome to improve the properties of the T cell; and (5) genetically encoded technologies for engineering T cells to enhance the cytotoxic activity and reprogram the tumor microenvironment for more effective anti-tumor responses. This approach is differentiated by (1) careful analysis of clinical and correlative data with the goal of precisely defining the key attributes of a cellular therapy necessary for anti-tumor effect; (2) the ability to design and then engineer a cell with these key attributes; combined with (3) a technology suite capable of delivering multiple innovations within a single drug product.

We believe this approach will allow us to address the challenges of achieving deep and durable clinical benefit to patients with cancers. We believe the ability of tumors to evade the immune system and escape the action of a single drug intervention can be addressed by cellular therapies pre-armed with multi-layered strategies for tumor eradication and control. These multiplex cell therapies may have the potential to achieve a depth and durability of response, independent of the tumor type, that is not measured in weeks but in months or years. We believe that our approach will allow us to improve how cell and gene therapies are discovered, developed, and manufactured, with the potential to transform the care of patients with cancer. For example, bbT369, our product candidate for B cell non-Hodgkin's lymphoma (B-NHL), uses multiple technologies to address the two main modes of failure observed with CD19-targeted T cell approaches: loss or diminution of antigen expression and reduction in T cell activation through loss or diminution of co-receptor signaling.

Our past experience in the clinical setting also provides us with a unique advantage, given the relative nascency of the CAR T cell field and the consequent paucity of large data sets of autologous cellular therapies in cancer. We, and through our collaborators at BMS, have treated hundreds of patients with multiple myeloma in the clinical setting, and the clinical and correlative data sets from the studies of Abecma and the bb21217 product candidate provides us with a deep, data-based understanding of the biology of the tumor itself, its interplay with immune cells and which cell therapy attributes are key to patient response. We believe that understanding is critical to identifying the key barriers in the treatment of the cancer. Specifically, we believe that understanding the heterogeneity of target expression combined with any tumor-specific mechanisms of immune evasion at play can help define the components of a cellular therapy with the potential for maximal anti-tumor activity. This understanding will be key to our product candidate design and selection, manufacturing process design and execution, and clinical trial design and development strategy.

In designing our next-generation product candidates, we start with the concept of a tumor-redirected T cell (via CAR or engineered TCR technology) and then add one or more additional features or components from the suite of proprietary technologies we have developed with the purpose of overcoming specific limitations of first-generation T-cell therapies. For example, these additional technologies may address:

- Tumor targets with off-tumor expression, through the application of our regulatable CAR T technology, dimerizing agent–regulated immunoreceptor complex (DARIC);
- Immunosuppressive molecules in the tumor microenvironment, through the application of our chimeric TGFβ flip receptor (CTBR) technology which turns a suppressive signal into a T cell supportive interleukin receptor signal;
- Antigen loss or down-regulation resulting in escape, through application of our dual-targeting CAR T cell technology; or
- Incomplete T cell activation or proliferation resulting in a loss of T cell potency, through application of our gene editing technology to knock-out intracellular checkpoints.

Our lead preclinical programs in B cell non-Hodgkin's lymphoma and acute myeloid leukemia are illustrations of our multiplex approach applied to address the specific challenges of treating those cancers.

We are developing our bbT369 product candidate as a treatment for patients with B-NHL. The advent of the first generation of anti-CD19 CAR T products represents a significant advancement in the field of B-NHL and has established a new standard for the treatment of patients with relapsed and refractory B-NHL. However, more than half of patients treated with an anti-CD19 CAR T do not achieve durable remission. Prognosis remains poor for these patients, with median overall survival after axi-cel of approximately 6 months for patients initially responding and less than 2 months for patients without initial response. The main limitations of the first-generation CAR T therapies are the lack of complete response in some patients and the potential for late relapse, indicating a need for deeper and more durable treatment responses. We take a differentiated approach from the approved anti-CD19 CAR T therapies: we have designed a dual-targeting CAR to target antigens that are co-expressed in many B-NHL tumors to limit antigen escape (as has been seen with CD19-targeted therapies). We provide split co-stimulation to drive maximal activation of the T cell in response to antigens. We include a gene edit designed to drive increased

expansion, resist anergy, and maintain potency in sub-optimal conditions for T cell activation. We plan to file an Investigational New Drug Application (IND) for the Phase 1 clinical study for bbT369 in the fourth quarter of 2021.

Although CAR T therapy has shown transformative potential and durable efficacy in other hematologic tumors, the use of CAR T therapy in the treatment of acute myeloid leukemia (AML) has been complicated by the expression of key targets such as CD33 across healthy myeloid cells in addition to leukemic blasts and stem cells. In other words, a highly potent CAR T cell directed towards one of these targets carries the significant risk of "on-target, off-tumor" toxicity because of broad myeloid aplasia. In our program for AML, we seek to address the challenge of balancing potency and safety risk by combining advanced CAR T receptor technology with our DARIC technology, a pharmacologically controlled "on-off" switch to reversibly regulate the activity of the CAR T cell. We have designed the CAR to target both full-length and alternatively spliced CD33 variants to address heterogeneity in the disease, and to reduce the risk of antigen escape and disease relapse. We believe that the DARIC switch will give treating physicians the ability to turn off highly potent CAR T cell activity to allow for myeloid recovery, while being able to re-activate CAR T cell activity on demand. We expect an investigator-initiated proof-of-concept clinical trial of our DARIC33 product candidate in pediatric relapsed and refractory AML patients will begin in the first half of 2022.

Our Strengths

We believe that the capabilities and experience that our team has accrued provide us with a unique opportunity to capitalize on recent progress in the understanding of genetics, gene editing, gene expression, tumor biology, immunology, process analytics, computational biology and data analytics to discover, develop and bring to the market next-generation cell and gene therapies for cancer:

- ***Extensive suite of gene modification technologies allows us to create multiplex product concepts:*** We have access to a broad range of technologies that we can leverage to selectively combine in addressing the challenges of specific cancers. With internal capabilities to knock-in, knock-out, modify, and control expression of genes across multiple modalities with gene addition, gene editing, cell engineering, and synthetic biology approaches, we have the ability to apply a combination of technologies to design multiplex next-generation cell and gene therapies for cancer.
- ***Deep clinical experience and expertise with data science-driven iteration***: From having treated hundreds of patients with multiple myeloma in CAR T programs through our collaboration with BMS, we have gained a deep understanding of cell therapy itself as well as an appreciation for the value of iterating on clinical data to inform our product candidate design, selection, manufacturing, clinical trial design and development strategy. Additionally, we are employing data analytics in manufacturing to understand the critical product attributes of successful cellular products.
- ***Manufacturing experience:*** Our team has accumulated significant experience in the manufacturing, analytical testing, and quality aspects from both lentiviral vectors and autologous lentiviral vector-transduced cellular drug products, from shepherding Abecma through clinical development, regulatory approval, and to commercialization in the United States, as well as from bluebird bio's betibeglogene autotemcel in Europe. Moreover, we have successfully scaled-up our suspension-based manufacturing process for lentiviral vector (sLVV), which is being utilized in ongoing clinical trials for ide-cel. We believe our experience spanning first-in-human to commercial manufacturing, quality control and quality assurance represents know-how critical to the efficient translation and development of our multiplex product candidates.
- ***Collaboration and connectivity:*** We have a strategic network of collaborations across industry, academic scientists, and medical experts to access technologies and expertise that supplement our proprietary technologies. We believe these collaborations and partnerships provide us with a rich suite of technologies permitting the design of impactful multiplex product candidates.

Who We Are

Our people form the most vital core of our company. We have assembled a diverse group of experienced scientists and researchers, manufacturing experts, and engineers to execute our strategic plan. We have a passionate and energized team with a bold culture of innovation, focused on the discovery and development of therapies that we believe may have the potential to be first-in-class or best-in-class, and who are committed to the research and development of therapeutic approaches that we believe may have the potential to transform the lives of patients with cancer.

2seventy bio's incoming chief executive officer, Nick Leschly, launched bluebird bio in 2010 and has led the growth of the pioneering gene and cell therapy company, leveraging his deep business strategy and entrepreneurial skills built over the last two decades. William "Chip" Baird, chief financial officer of bluebird bio since 2019 and future chief financial officer of 2seventy bio, is leading the separation of the companies and launch of the new company. Mr. Baird has more than 20 years of financial and strategic planning experience in the biopharmaceutical sector. Philip Gregory, D. Phil, has held the reigns as chief scientific offer at bluebird bio since 2015 and will transition to chief scientific officer of 2seventy bio. Dr. Gregory has led the scientific development of products for a range of diseases with our three gene therapy technology platforms: gene addition with lentiviral gene delivery, cell therapy and megaTAL-enabled gene editing.

In addition to our executive leadership team, we have structured the company to include approximately 90 individuals with medical or Ph.D. degrees, which include key scientists and researchers who have made important discoveries and progress across our technologies, as well as those with deep experience and expertise in building high growth, disruptive companies.

Our Strategy

Our strategy is to apply our broad range of technologies to design multiplex product candidates that address the key treatment challenges in cancer. Unlike other oncology-focused companies in our space, we believe our breadth of technology enables us to develop tailored products focused on the specific areas of cancer biology we have identified. We selectively combine the relevant features and components from our range of tools and technologies to address the defined attributes of a cellular therapy necessary for anti-tumor effect.

To execute on our strategy, we plan to:

- Commercialize Abecma and develop bb21217 through our collaboration with BMS, the learnings from which allow us to leverage our clinical experience and product revenue stream to further invest in our next-generation proprietary programs.
- Leverage our leadership position in autologous CAR T therapies to advance into the clinic our next-generation programs in B cell non-Hodgkin's lymphoma, acute myeloid leukemia, and multiple myeloma.
- Apply our multiplex approach to the discovery and design of transformative cell and gene therapy products for the treatment of solid tumors.
- Seek to extend our approach to other cell types beyond T cells and to include allogeneic approaches, as we gain additional experience in our autologous T cell programs.
- Build upon our existing internal lentiviral vector manufacturing know-how and experience through selective investments in manufacturing collaborations and expanding our internal capabilities over time, with the objectives of enabling rapid iteration on clinical learnings into research and development, increasing the efficiency of manufacturing processes, and improving the overall patient and healthcare professional experience.

Background

Cancer is a leading cause of death worldwide. It is characterized by the uncontrolled growth of cells with the ability to evade recognition by the immune system's surveillance. Cancer cells are abnormal cells that have

developed mutations in essential cellular functions, driving increased cell division and growth as well as acquiring the ability to escape immune surveillance. In recent years, growing knowledge of cancer cell metabolism and genomics, as well as of the body's immune response, has led to new classes of therapies against cancer targets and pathways that have dramatically reshaped the treatment landscape. Despite these advances, there continues to be a high unmet medical need for additional products and treatments, especially for patients with recurrent tumors or cancer types that are resistant to current therapeutic options.

The advent of immunotherapy, and specifically engineered cell therapies, has offered the potential of moving past the treatment paradigm of treatment of cancer as a "chronic" disease. By using engineered T cells, the first generation of engineered cell therapies directed the body's natural immune response against cancer cells. Compelling efficacy data in cancers with historically bleak outcomes, with patients experiencing deep responses lasting for extended periods of time across multiple indications, showed the potential for engineered cell therapy to achieve a functional cure for some patients. However, there remain major tumor types that do not respond to current cell and gene therapy approaches, and even within tumor types where cell and gene therapy has been broadly successful, many patients fail to receive an optimal outcome.

Challenges that remain in the discovery and development of engineered cell therapies for cancer reflect the difficulties in striking balance between efficacy and safety in these therapies. These challenges include:

- **Selecting an appropriate target tumor antigen**. If a potential cancer target antigen is also expressed or presented on normal tissues, the risk of on-target, off-tumor toxicity is increased. If an engineered T cell is designed to target a singular antigen, the risk of tumor escape mechanisms increase, if the expression of the antigen is reduced or lost due to selective pressure or due to cellular internalization. If any of these occur, the safety and/or efficacy of the engineered cell therapy would be compromised.

- **Engineering an optimal receptor**. The properties of the receptor and receptor construct are critical for the overall success of the therapy. These properties include the affinity and flexibility of the antigen-binding domains (which are important for tumor-specific recognition), and the co-stimulatory domains for CAR T cell activation (which are important for the metabolism, function and persistence of T cells).

- **Complex manufacturing**. The manufacture of individualized cell and gene therapies may be lengthy and complex. Patients typically wait approximately approximately three weeks to two months to be treated with autologous engineered cells, and in the meantime such patients may experience complications or progressions from underlying disease without bridging therapies, which may introduce additional risk and toxicities for the patients, rendering them ineligible for treatment. In addition, the "process is the product" in the case of engineered cell therapies because of the complex nature of their manufacture compared to other common biologically derived modalities such as recombinant proteins and antibodies. Such therapies are inherently more complex to characterize and control in part due to the variability of collected cells from the individual patients, and the process and analytical sciences to enable scale-up for commercial manufacturing are still significantly less advanced than that of proteins and antibodies, which limits access to patients.

Recent significant progress in the understanding of genetics, gene editing, gene expression, tumor biology, immunology, process analytics and computational biology have converged to create an opportunity to markedly increase the breadth and depth of the potential impact of cell and gene therapies, and we believe that we have a unique opportunity with our capabilities to capitalize on this opportunity to discover, develop and bring to the market next-generation cell and gene therapies for cancer.

Our Technologies

Our oncology programs use a lentiviral vector to deliver the genetic cargo necessary to program a patient's own T cells to recognize specific proteins or protein fragments on the surface of cancer cells to kill the cancer cells. Our current programs are based on CAR technology to program T cells to recognize cancer cells based on expression of specific cell surface antigens, and T cell receptor technology to program T cells to recognize cancer cells based on protein fragments derived from either intracellular or extracellular proteins displayed on the tumor cell surface. The genetically engineered T cells are designed to supplement a patient's immune system and may be further engineered

to overcome immune evasion mechanisms employed by cancer cells. Our approach is to create multiplex engineered cell therapies by combining our foundational lentiviral vector and CAR/TCR technology with next-generation tools to address the challenges in existing cancer treatments.

- **Dual-Targeting.** Polyclonal responses are a hallmark of adaptive immunity, but most T cell therapies have been devised with antigen receptors specific to a single target antigen. There are now many documented cases of cancer deploying its intrinsic genetic plasticity to escape mono-targeted T cell therapies (both with cellular and more classical modalities, such as small molecules and antibodies). In such cases, our solution is to utilize a dual-targeting antigen receptor, including a multi-chain, dual-targeting architecture that is able to respond when either target antigen is present on a cancer cell, as well as an architecture that leverages the unique properties of humanized single-domain camelid-derived antibodies.

- **DARIC.** We have developed a pharmacologically-regulated split antigen receptor architecture, which we refer to as DARIC, that comprises separate antigen targeting and signal transduction componentry. DARIC receptors become poised for anti-tumor function only when the two components are brought together as heterodimers, a process that is strictly dependent on the bridging function of the drug rapamycin. This technology enables pharmacological, “on-demand” control of engineered T cell responses. Controlling the “on” and “off” states of engineered T cells also creates opportunities to pursue cancers and cancer targets with disease characteristics and expression profiles that are incompatible with constitutively responsive antigen receptors.

- **Reversal of immunosuppression.** Patients who present in the clinic with advanced metastatic disease are host to tumors that have evolved to evade endogenous immunity via a variety of mechanisms. Tumor infiltrating T cells lose potency over time due to repetitive antigen stimulation and exhaustion in a tumor microenvironment that suppresses T cell function. Checkpoint engagement, hypoxia, poor nutrient conditions, and exposure to immunosuppressive cell types and cytokines all significantly blunt T cell potency and thwart attempts to regress tumors in clinically meaningful ways. We have developed a suite of synthetic biology innovations that antagonize and rewire immunosuppressive signaling and response pathways. We have focused significant attention on transforming growth factor beta (TGFβ), a profoundly immunosuppressive cytokine found at high levels in many solid tumors. Our chimeric TGFβ flip receptor (CTBR) technology converts this suppressive signal into a supportive interleukin receptor signal that enhances T cell function. Suppressive to enhancing signal conversion operates in a localized, engineered T cell intrinsic manner, enhancing potency within the microenvironment of the tumor where the highest concentrations of activated TGFβ ligand are present. We have also developed several approaches to modulate T cell metabolism to allow for enhanced function and potency in the metabolically challenging tumor microenvironment.

- **Co-stimulation.** Parallel track costimulatory domains, also known as chimeric costimulatory receptors, offer a unique set of functional attributes that culminate in enhanced anti-tumor activity. This technology pairs enhanced targeting breadth with a qualitatively distinct and more potent functional response, simultaneously countering two potential mechanisms of resistance.

- **Gene editing.** megaTALs are highly specific, compact nucleases that efficiently catalyze the formation and mutagenic resolution of double-stranded breaks at pre-specified genetic target sequences. Using our megaTAL gene editing platform, we have demonstrated that disrupting genes that intersect with T cell signaling and response pathways can promote more potent immune responses. In addition, we have developed a full suite of on-target editing assays, functional bioassays, and off-target discovery and verification analytics to deeply characterize gene editing events and their functional consequences in target cells enabling the potential application of this technology in the clinical setting.

- **mRNA capabilities**. We have also developed messenger RNA (mRNA) capabilities that enable transient gene expression, both in cells cultured ex vivo and for organ-specific in vivo delivery. We manufacture mRNA starting from a proprietary plasmid template outfitted with an encoded poly-A tract, an approach that results in highly homogenous mRNA species following in vitro transcription. Our purification process includes double-stranded RNA (dsRNA) depletion steps to minimize immunogenicity and optimize cell

viability. A robust suite of analytical assays is in place to ensure that consistently pure and potent material is generated. We have developed clinical-scale electroporation processes for ex vivo mRNA delivery and are actively using these processes to improve T cell potency via our megaTAL gene editing platform. This technology can potentially be further leveraged to transiently express other factors that may be advantageous to *ex vivo* manufactured T cells.

- **Cellular chassis**. Beyond genetic modifications, we are also developing approaches aimed at selecting for or enriching distinct cell types for tumor targeting that may be broadly applicable to both autologous and allogeneic settings. For instance, our bb21217 program utilizes a PI3K-inhibiting small molecule to enrich for memory-like T cells with the goal of extending the durability of action of our CAR T cells for multiple myeloma. In addition, we have developed approaches for the selection, transduction and expansion of gamma delta T cells. We believe gamma delta T cells may be useful in the allogeneic setting due to the absence of alloreactivity or graft versus host disease while demonstrating potent anti-tumor activity.

In addition, we continue to invest in our core foundational technologies and build upon our leadership position in autologous engineered cell therapy products based on CAR and TCR approaches:

- **Next-generation lentiviral vector design.** With decades of experience in this technology, we have extensively refined the componentry and methodology behind lentiviral vector design and manufacturing. Our transfer plasmid design elements include several innovations that have created advanced gene expression tuning capabilities and the delivery of large and complex genetic payloads via transgene stacking. We have developed proprietary codon optimization algorithms, promoter variants, and regulatory elements that together enable constitutive and/or responsive expression profiles across a range of transgene expression levels. These mature capabilities enable highly efficient transfer of sophisticated genetic modules, such as the multiplex product concepts represented by our next-generation programs.

- **Target selection and validation**. Cancer targets with profiles that make them appropriate for cell therapy development have diverse structural features, biochemical properties, and sub-cellular distribution characteristics. To support novel target identification, we have developed significant in-house expertise and external collaborations in the areas of data mining, functional genomics, and primary tissue analysis. We have also built a full suite of target validation assays to perform confirmatory studies assessing tumor and normal tissue expression properties. In addition, we have developed significant internal expertise specific to the de-risking of potential off-target liabilities of TCR engineered T cells. We have focused the bulk of our efforts on select hematological and solid tumor indications. This approach allows us to deeply interrogate the target landscape in cancers where T cell therapies may have the highest potential for technical success.

- **Receptor engineering**. We have access to state-of-the-art binder capabilities through our collaboration arrangements that cover the full range of potential cancer targets. For intracellular targets of interest, our partners develop TCRs and fully humanized “peptide-in-groove” (PiG) scFv reagents. For surface proteins, we have multiple providers of immunization-sourced, fully humanized scFv and single-domain reagents.

- **Manufacturing process innovations**. Our analytical development, clinical bioassays, correlative research, and data sciences teams have unique access to clinical trial data using CAR T therapies. We are continuously interrogating these data sets to isolate key manufacturing variables and correlates of clinical signals that enable hypothesis testing. These activities derive insights that inform process research directions for optimizing T cell manufacturing through reagents, processes, and culture timing, and for the discovery of underlying biological relationships between clinical and correlative data.

Our Programs

B-Cell Non-Hodgkin’s Lymphoma

We are developing our bbT369 product candidate as a treatment for patients with B-cell non-Hodgkin’s Lymphoma (B-NHL), a heterogeneous group of neoplasms that can result in enlarged nodes across the body, neck, and abdomen, often coinciding with “B-symptoms” that are significant to the prognosis and staging of the disease, such as fever, drenching night sweats, and rapid and extreme weight loss. B-cell NHLs represent more than 85% of

all NHL cases worldwide, and we plan to develop bbT369 to treat several subtypes of B-cell NHLs, specifically Diffuse Large B-Cell Lymphoma (DLBCL), High-Grade B-Cell Lymphoma (HGBCL), Primary Mediastinal Large B-Cell Lymphoma (PMBCL), Follicular Lymphoma (FL), or Transformed Follicular Lymphoma (TFL). DLBCL is the most common form of NHL, accounting for a third of all NHL cases, with annual incidence in the United States estimated at approximately 25,000. DLBCL is a particularly aggressive form of NHL that requires immediate therapy upon diagnosis (with a median overall survival of approximately one year in untreated patients).

CAR T cells targeting CD19 represent a significant advancement in the field of B-NHL establishing a new standard of treatment for relapsed and refractory patients and the potential for curative therapy. Specifically, anti-CD19 CAR T products axicabtagene ciloleucel, tisagenlecleucel, and lisocabtagene maraleucel have been approved for the treatment of adult patients with relapsed and refractory large B Cell lymphoma (including DLBCL, HGBCL and TFL) after two or more lines of systemic therapy. However, survival for certain high-risk subtypes (e.g., non-GCB, DHL) and relapsed and refractory patients is poor. More than half of patients treated with CD19 CAR T do not achieve durable remission, and prognosis is poor with a median overall survival of approximately five months. The main limitations of the currently available CAR T treatments are the lack of complete response in some patients, and the potential for late relapse, indicating a need for deeper and more durable treatment options.

Our multiplex approach is intended to enhance the depth and duration of response in patients currently underserved by existing options. bbT369 is a non-CD19-containing CAR T that addresses the limitations of the currently available therapies by using unique layered technologies, designed with the following key features:

- A novel combination of dual targets (non-CD19-containing) that are co-expressed in many B-NHL tumors to both allow treatment of CD19 negative / CD19 low tumors and to limit the potential for antigen escape;
- Split co-stimulation to drive optimal and complete immune signaling; and
- A gene edit to drive increased expansion, resist anergy, and maintain potency in sub-optimal tumor conditions.

In preclinical models, bbT369 clears a variety of B-NHL tumors, including both dual and single target positive tumors, and outperforms CD19 in cells with varying levels of antigen expression. Additionally, the gene edit demonstrates increased cytokine production and expansion in vitro, and when compared to the same dual-targeted, but unedited, construct, bbT369 results in a lower rate of late tumor relapses.

Our planned first-in-human clinical trial is expected to be an open label, multi-site Phase 1/2 clinical trial, that will enroll patients who are either naïve to CD19 CAR T or who have relapsed after CD19 CAR T. We anticipate that the phase 1 portion will be a dose-escalation study, with the phase 2 stage allowing continued investigation of these two different patient populations at the recommended dose. We are planning to file the IND for this Phase 1/2 clinical trial in late 2021.

Acute Myeloid Leukemia

We are developing our DARIC33 product candidate for the treatment of patients with acute myeloid leukemia (AML). Systemic therapy (including chemotherapy, hypomethylating agents, and targeted biologics) alongside hematopoietic stem cell transplant (HSCT) are the mainstays of AML treatment today. Of note, many adult patients are unfit for such intensive therapy, which in turn leads to less favorable clinical outcomes. Though HSCT provides meaningful clinical benefit to those who are eligible, the unmet need in this heterogenous and aggressive disease remains high. Prognosis is typically poor for adult patients, with a 5-year survival rate of 10-35% depending on disease subtype. In children and adolescents, the 5-year survival rate is 50 to 70%, with variation by subtype and other risk factors as seen in adults. Of note, median overall survival in adults with relapsed and refractory AML is less than 12 months, indicating a particularly high unmet need for these patients.

Although CAR T therapy have shown transformative potential and durable efficacy in other hematologic tumors, their use in the treatment of AML is complicated by the expression of key AML targets, such as CD33, across healthy myeloid cells in addition to leukemic blasts and stem cells. Thus, a highly potent CAR T cell directed towards one of these targets carries the potential risk of significant “on-target, off-tumor” toxicity because of broad

myeloid aplasia. Achieving durable remission with a CAR T while balancing the safety risks is a critical challenge for the treatment of AML with CAR T therapy.

We seek to address this challenge with our DARIC33 product candidate, which combines CAR T technology with DARIC, our dimerizing agent-regulated immunoreceptor complex technology. In our DARIC33 product candidate, the traditional components of an anti-CD33 CAR are separated into two subunits which only enable T cell activation in the presence of sub-immunosuppressive doses of rapamycin, an orally-administered small molecule, which functions as an "on-off" toggle switch. In vitro and in vivo studies have shown that this regulated activation is reversible upon withdrawal of rapamycin and can be subsequently re-activated upon re-administration of rapamycin. Our DARIC33 product candidate is designed to utilize this on-off toggle switch in the context of an autologous CD33-directed DARIC-T cell to drive deep responses in AML while "on" and allow myeloid compartment recovery while "off".

In collaboration with Seattle Children's Therapeutics (a non-profit enterprise associated with Seattle Children's Research Institute), we are planning an investigator-initiated proof-of-concept clinical trial of DARIC33 in pediatric relapsed and refractory AML patients, which we expect to begin in early 2022. This dose-finding trial is aimed at establishing safety, manufacturability, and early efficacy signals for DARIC33 and we expect to conduct correlative analyses to confirm rapamycin-driven regulation in humans. In parallel, we are also advancing next-generation, preclinical product concepts for pediatric and adult AML in partnership with Seattle Children's Research Institute. These concepts include multiplex targeting and additional enhancement technologies to address the heterogeneity of disease and prevent relapse.

Multiple Myeloma

Multiple myeloma is a blood cancer caused by malignant plasma cells and typically originates in the bone marrow. In the United States, more than 34,000 new cases of multiple myeloma are estimated to be diagnosed in 2021. Despite advances in treatment, multiple myeloma remains an aggressive and incurable disease characterized by periods of remission and relapse. Most patients experience relapse following initial therapies, and depth and duration of response as well as survival outcomes decrease with each successive treatment. No standard of care has been established for patients who have disease progression despite receiving the three main classes of myeloma therapy (immunomodulatory drugs, proteasome inhibitors, and anti-CD38 antibodies), and outcomes are poor, with very low response rates (20% to 30%), a median progression-free survival of three to four months, and a median overall survival of eight to nine months. Through our collaboration with BMS, Abecma and bb21217 are our lead programs in multiple myeloma. The terms of our arrangements with BMS are described more fully below under "Strategic collaborations in oncology—Our strategic alliance with BMS." We are also conducting next-generation discovery programs in multiple myeloma on our own.

Abecma. In March 2021, Abecma (idecabtagene vicleucel; ide-cel) was approved by the FDA in the United States for the treatment of adults with multiple myeloma who have received at least four prior lines of therapy, including an immunomodulatory agent, a proteasome inhibitor, and an anti-CD38 monoclonal antibody. Abecma is the first-in-class B cell maturation antigen (BCMA) CAR T therapy for the treatment of multiple myeloma, and represents our first oncology product candidate that has progressed from our internal research programs, through clinical development to approval and commercialization, together with our collaboration partner, BMS. BCMA is a cell surface protein that is nearly universally expressed on cancer cells in multiple myeloma, and on normal plasma cells and mature B cells, but not other cells. As the first CAR T cell therapy approved for multiple myeloma, Abecma is a potentially transformative, single-infusion, individualized treatment that offers patients who have limited effective treatment options the potential for long-term disease control. The approval of Abecma in the United States was based on positive results from the pivotal KarMMa study. In the KarMMa study, the overall response rate was 73%, and 33% of patients achieved a complete response. Onset of response was rapid with a median time to response of one month. Median duration of response was 10.7 months and 19 months for those who achieved a complete response. Abecma has a well-established and predictable safety profile with mostly low-grade cytokine release syndrome (Grade ≥3: 6%) and neurologic toxicities (Grade ≥3: 3.1%) with early onset and resolution. Results from the KarMMa study were published in the February 24, 2021 issue of the New England Journal of Medicine. The FDA and EMA have granted Orphan Drug status to ide-cel for the treatment of patients with relapsed

and refractory multiple myeloma. The EMA has granted PRIME eligibility to ide-cel for relapsed and refractory multiple myeloma. BMS is conducting studies to support the use of Abecma in earlier lines of therapy.

bb21217. The bb21217 product candidate is an investigational BCMA-targeted CAR T cell therapy that uses the same CAR molecule as ide-cel, but is cultured with a PI3K inhibitor to enrich for T cells displaying a memory-like phenotype with the intention of increasing the in vivo persistence and function of CAR T cells. We believe that the persistence of functional CAR T cells after infusion may be one determinant of duration of response. The clinical development program for bb21217 includes an ongoing Phase 1 CRB-402 study, a first-in-human study of bb21217 in patients with relapsed and refractory multiple myeloma, designed to assess safety, pharmacokinetics, efficacy, and duration of effect. Data from CRB-402 were presented, together with our collaboration partners at BMS, at the annual meeting of the American Society of Hematology in December 2020. As of the September 1, 2020 cutoff date, 69 patients were treated with bb21217. The study has completed enrollment and follow-up is ongoing as data continue to mature. The safety profile of bb21217 in this Phase 1 study was consistent with known toxicities of BCMA CAR T-cell therapies, with low rates of cytokine release syndrome (Grade ≥3) and neurotoxicity. Consistent with our hypothesis that enriching drug product for memory-like T cells may translate to improved durability of response, the estimated median duration of response was 17.0 months across doses. Long-term CAR T cell persistence was observed in six of eleven evaluable patients at Month 12 and three of six evaluable patients at Month 18.

Next-generation approaches. CAR T therapies have transformed the treatment landscape in multiple myeloma and created the possibility for outcomes that were not possible with traditional therapies. Despite the significant advances that the current generation of CAR T therapies brought to patients, there are still significant challenges such as the need to improve duration of response and reduce manufacturing turnaround time. Our next-generation multiple myeloma program strategy is focused on leveraging our clinical experience from Abecma and bb21217, translational and correlative data, and technology platforms to solve definable and meaningful problems in the field. Leveraging our leadership in autologous CAR T therapy, our next-generation autologous multiple myeloma program utilizes multiple technologies including process improvements and dual targeting, with the goal of achieving best-in-class efficacy through deeper and more durable responses than the current generation of autologous CAR T products. We are also pursuing an allogeneic program that leverages our expertise with BCMA targeting and an innovative gamma-delta T-cell chassis to develop an off-the-shelf CAR T cell therapy that avoids the risk of toxicities such as graft versus host disease, while potentially offering additional advantages such as increasing manufacturing robustness, decreasing manufacturing turnaround time, and lowering cost of goods.

Solid Tumors

Solid tumors represent the next frontier for cell and gene therapies. Survival expectations in patients with solid tumor who have relapsed after existing therapies are often less than one year. While cell and gene therapies have demonstrated durable remission in hematologic malignancies, none have yet been approved for treating solid tumors. Key challenges to the discovery and development of cell and gene therapies in solid tumors includes the lack of strongly and selectively expressed targets as well as a hostile tumor microenvironment that serves as a barrier for T cells accessing the tumor and suppresses immune-mediated responses. We believe that our exclusive set of technologies, partnerships and cell and gene therapy experience enables the engineering of multiplex products to uniquely address the key challenges of solid tumors. Our research-stage programs in solid tumors include tumors expressing the MAGE-A4 antigen. Over ten types of solid tumors express the MAGE-A4 antigen, making it a promising target for cell therapy, including lung, head and neck, gynecologic and gastric cancers. Our MAGE-A4 program addresses the challenges of solid tumors in a three-pronged way: (1) we have identified a potent T cell receptor targeting a prevalent intracellular peptide antigen from MAGE-A4, (2) engineered this receptor for a strong anti-tumor response, and(3) incorporated an innovative switch receptor (CTBR12) that converts the highly suppressive TGFβ signal in the hostile tumor microenvironment into a potent T cell intrinsic activation signal. The TGFβ signaling pathway has been broadly implicated as a key suppressive factor in the TME of multiple MAGEA4+ indications, including non-small cell lung, bladder, ovarian, and head and neck carcinomas.

Manufacturing

We have entered into agreements with external manufacturing partners in the United States and Europe to support our various preclinical and clinical programs in oncology, and to support Abecma commercial vector supply. In addition, we are in the process of building internal drug product manufacturing for clinical use, as a core pillar of our strategy to rapidly iterate on clinical learnings in the development of our pipeline programs. We also have a manufacturing collaboration based out of our facility in Durham, North Carolina to increase the efficiency of manufacturing processes for cell and gene therapies to reduce the cost of supply and enable patient access.

Strategic Collaborations

Given our multiplex approach to the discovery and development of next-generation cell and gene therapies for cancer, we have partnered strategically to access complementary technologies and disease-area expertise. We have historically also formed collaborations to access the substantial funding and other resources required to develop and commercialize cell and gene therapies for cancer. Currently, our strategic collaborations in oncology include:

BMS. In connection with the separation of bluebird bio's oncology portfolio and programs from its severe genetic disease portfolio and programs, bluebird bio will assign to us all of the agreements relating to its collaboration with BMS. bluebird bio began a collaboration with BMS in 2013 under a broad-ranging Master Collaboration Agreement between bluebird bio and Celgene Corporation (now BMS following its acquisition of Celgene in November 2019). Currently, the collaboration focuses on the co-development and co-promotion of Abecma in multiple myeloma, as well as the development of bb21217, also in multiple myeloma. Additionally, in March 2013, bluebird bio entered into a Platform Technology Sublicense Agreement (the "Sublicense Agreement") with BMS pursuant to which bluebird bio obtained a sublicense to certain intellectual property from BMS, originating under BMS's license from Baylor College of Medicine, for use in the collaboration.

BMS Amended Collaboration Agreement

In June 2015, bluebird bio and BMS amended and restated the Master Collaboration Agreement (the "Amended BMS Collaboration Agreement"). Under the Amended BMS Collaboration Agreement, the parties narrowed the focus of the collaboration to exclusively work on anti- B-cell maturation antigen ("BCMA") product candidates for a new three-year term. Under the terms of the Amended BMS Collaboration Agreement, for up to two product candidates selected for development under the collaboration, bluebird bio was responsible for conducting and funding all research and development activities performed up through completion of the initial phase 1 clinical study of such product candidate. On a product candidate-by-product candidate basis, up through a specified period following enrollment of the first patient in an initial phase 1 clinical study for such product candidate (each, a "BMS Option Period"), bluebird bio had granted BMS an option to obtain an exclusive worldwide license to develop and commercialize such product. Following BMS's license of each product candidate, bluebird bio was, and following assignment of the Amended BMS Collaboration to us, we will be entitled to elect to co-develop and co-promote each product candidate in the U.S. The Amended BMS Collaboration Agreement will terminate upon the later of the expiration of the Collaboration Program Term and expiration of the last-to-expire BMS Option Period, unless earlier terminated (a) by mutual consent of the parties, (b) by us following a material breach by BMS that remains uncured after a specified period, (c) by BMS following a material breach by us that remains uncured after a specified period or (d) by BMS at its discretion, following a specified notice period.

BMS Ide-cel License Agreement

In February 2016, BMS exercised its option to obtain an exclusive worldwide license to develop and commercialize ide-cel (now commercialized as Abecma), the first product candidate under the Amended BMS Collaboration Agreement, pursuant to an executed license agreement ("Ide-cel License Agreement") entered into by the parties in February 2016 and paid the associated $10.0 million option fee. Pursuant to the Ide-cel License Agreement, BMS was responsible for development and related funding of ide-cel after the substantial completion of the phase 1 clinical trial. bluebird bio was responsible for the manufacture of vector and associated payload throughout development and upon BMS's request, throughout commercialization, the costs of which were reimbursable by BMS in accordance with the terms of the Amended and Restated Co-Development, Co-Promote and Profit Share Agreement, as further described below. BMS was responsible for the manufacture of drug product

throughout development and commercialization. Under the Ide-cel License Agreement, bluebird bio was eligible to receive U.S. milestones of up to $85.0 million for the first indication to be addressed by ide-cel and royalties for U.S. sales of ide-cel. Additionally, bluebird bio was eligible to receive ex-U.S. milestones of up to $55.0 million and royalties for ex-U.S. sales of ide-cel. The Ide-cel License Agreement will continue on a country-by-country basis, until there are no more payments owed to us on ide-cel in such country, unless earlier terminated (a) by mutual consent of the parties, (b) by us following a material breach by BMS that remains uncured after a specified period, (c) by BMS following a material breach by us that remains uncured after a specified period, (d) by us in the event that BMS or any of its affiliates or sublicensees directly or indirectly challenges in a legal or administrative proceeding the patentability, enforceability or validity of any patents within the licensed intellectual property licensed, or (e) by BMS at its discretion, following a specified notice period.

BMS Ide-cel Co-Development, Co-Promote and Profit Share Agreement

In March 2018, bluebird bio elected to co-develop and co-promote ide-cel within the United States pursuant to the execution of the Amended and Restated Co-Development, Co-Promote and Profit Share Agreement (“Ide-cel CCPS”), which replaced the Ide-cel License Agreement. As a result of executing the Ide-cel CCPS, the responsibilities of the parties remained unchanged from those under the Ide-cel License Agreement, however, bluebird bio has, and we will, share equally with BMS in all profits and losses relating to developing, commercializing and manufacturing ide-cel within the United States and have the right to participate in the development and promotion of ide-cel in the U.S. BMS is responsible for the costs incurred to manufacture vector and associated payload for use outside of the U.S., plus a mark-up. As a result of electing to co-develop and co-promote ide-cel within the United States, the milestones and royalties payable under the Ide-cel License Agreement were adjusted. Under the Ide-cel CCPS, bluebird bio was eligible to receive a $10.0 million milestone related to the development of ide-cel in the U.S. and, for the first indication to be addressed by ide-cel, ex-U.S. regulatory and commercial milestones of up to $60.0 million. Additionally, bluebird bio was eligible to receive royalties for ex-U.S. sales of ide-cel, but not for U.S. sales of ide-cel. Under the Ide-cel CCPS, the $10.0 million development milestone was achieved in the second quarter of 2019 and subsequently paid by BMS.

In May 2020, the First Amendment to the Amended and Restated Co-Development, Co-Promote and Profit Share Agreement (as amended, the "Amended Ide-cel CCPS") was executed, which amended the Ide-cel CCPS. Under the Amended Ide-cel CCPS, the parties will continue to share equally in all profits and losses relating to developing, commercializing and manufacturing ide-cel within the U.S. Under the Amended Ide-cel CCPS and the Amended bb21217 License Agreement, described further below, BMS was relieved of its obligations to pay future ex-U.S. milestones and royalties on ex-U.S. sales for each of ide-cel and bb21217 in exchange for an up-front, non-refundable, non-creditable payment of $200.0 million, which represents the aggregate of the probability-weighted, net present value of the future ex-U.S. milestones and royalties on ex-U.S. sales for each of ide-cel and bb21217. In connection with these amendments, BMS assumed the contract manufacturing agreements relating to ide-cel adherent lentiviral vector. Over time, BMS is assuming responsibility for manufacturing ide-cel suspension lentiviral vector outside of the United States, with 2seventy remaining responsible for manufacturing ide-cel suspension lentiviral vector in the United States. In addition, under the Amended Ide-cel CCPS and the Amended bb21217 License Agreement, described further below, the parties are released from future exclusivity related to BCMA-directed T cell therapies. There are no remaining milestones or royalties under the Amended Ide-cel CCPS. The Amended Ide-cel CCPS will continue on a country-by-country basis until there are no more payments owed one or the other party on ide-cel in such country, unless earlier terminated (a) by mutual consent of the parties, (b) by us following a material breach by BMS that remains uncured after a specified period, (c) by us at our discretion, following a specified notice period, (d) by BMS following a material breach by us that remains uncured after a specified period, (e) by BMS at its discretion, following a specified notice period, or (f) pursuant to certain other negotiated termination provisions.

Ide-cel is marketed as Abecma in the United States following its approval by the FDA in March 2021 for the treatment of adult patients with relapsed or refractory multiple myeloma after four or more prior lines of therapy, including an immunomodulatory agent, a proteasome inhibitor, and an anti-CD38 monoclonal antibody.

BMS bb21217 License Agreement

In September 2017, BMS exercised its option to obtain an exclusive worldwide license to develop and commercialize bb21217, the second product candidate under the Amended BMS Collaboration Agreement, pursuant to an executed license agreement (“bb21217 License Agreement”) entered into by the parties in September 2017 and paid an option fee of $15.0 million. Pursuant to the bb21217 License Agreement, BMS was responsible for development and related funding of bb21217 after the substantial completion of the ongoing phase 1 clinical trial. In 2019, the parties amended the protocol for the ongoing phase 1 clinical trial to enroll additional patients for which bluebird bio was reimbursed based upon an agreed-upon amount per patient. Under the bb21217 License Agreement, bluebird bio was eligible to receive U.S. milestones of up to $85.0 million for the first indication to be addressed by bb21217 and mid-single digit to mid-teens royalties for U.S. sales of bb21217. Additionally, bluebird bio was eligible to receive ex-U.S. milestones of up to $55.0 million and royalties for ex-U.S. sales of bb21217.

In May 2020, the Second Amended and Restated License Agreement ("Amended bb21217 License Agreement") was executed, which replaced the bb21217 License Agreement. Under the Amended bb21217 License Agreement, over time, BMS is assuming responsibility for manufacturing suspension lentiviral vector outside of the U.S., with 2seventy responsible for manufacturing suspension lentiviral vector in the United States. Under the Amended bb21217 License Agreement, expenses incurred by us associated with these activities are fully reimbursable by BMS at cost plus a mark-up. Throughout both development and commercialization, BMS is responsible for the manufacture of drug product. There are no remaining milestones and royalties related to the ex-U.S. development or commercialization of bb21217 following execution of the Amended bb21217 License Agreement. The Amended bb21217 License Agreement will continue until there are no more payments owed to us on licensed products in the United States, unless earlier terminated (a) by mutual consent of the parties, (b) by us following a material breach by BMS that remains uncured after a specified period, (c) by BMS following a material breach by us that remains uncured after a specified period, (d) by us in the event that BMS or any of its affiliates or sublicensees directly or indirectly challenges in a legal or administrative proceeding the patentability, enforceability or validity of any patents within the licensed intellectual property licensed, or (e) by BMS at its discretion, following a specified notice period.

We expect we will exercise our option to co-develop and co-promote bb21217 within the U.S. Our election to co-develop and co-promote bb21217 must be made by the substantial completion of the on-going phase 1 clinical trial of bb21217. If elected, we expect the responsibilities of the parties to remain largely unchanged, however, we expect we will share equally in all profits and losses relating to developing, commercializing and manufacturing bb21217 within the U.S. and to have the right to participate in the development and promotion of bb21217 in the U.S. Under this scenario, the U.S. milestones and royalties payable under the Amended bb21217 License Agreement would be adjusted and we would be eligible to receive a $10.0 million development milestone payment related to the development of bb21217 within the U.S. We would not be eligible for royalties on U.S. sales of bb21217 under this scenario. In the event we do not exercise our option to co-develop and co-promote bb21217, we will receive an additional fee in the amount of $10.0 million. Under this scenario, there would be no change to the U.S. milestones and royalties for U.S. sales of bb21217, as previously described above, for which we would be eligible to receive.

Regeneron. We have a broad collaboration with Regeneron covering the discovery, development, and commercialization of novel cell and gene therapies for cancer. Through this collaboration, we have access to Regeneron’s platform technologies for the discovery and characterization of fully human antibodies as well as T cell receptors against tumor-specific proteins and peptides that we may leverage in our collaboration programs.

Medigene. Through our collaboration, we have access to Medigene’s proprietary platform for the generation and design of T cell receptors that we may leverage in our product candidates.

Inhibrx. Through our collaboration, we have access to Inhibrx’s proprietary single-domain antibody platform to multiple cancer targets that we may leverage in our product candidates.

Gritstone Oncology. Through our collaboration with Gritstone, we intend to seek to validate cancer targets and discover T cell receptors that we may leverage in our product candidates.

We also have significant academic collaborations for the discovery, preclinical development, and initial clinical proof-of-concept of our product concepts, such as our collaboration with Seattle Children's Therapeutics and the University of North Carolina. In addition, we have a collaboration with Novo Nordisk for the in vivo application of our megaTAL gene editing technology to genetic diseases, including hemophilia.

Competition

The biotechnology and pharmaceutical industries are characterized by intense and rapidly changing competition to develop new technologies and proprietary products. Many of our competitors, either alone or with their strategic partners, have substantially greater financial, technical and human resources than we do and significantly greater experience in the discovery and development of product candidates, obtaining FDA and other regulatory approvals of treatments and the commercialization of those treatments. Accordingly, our competitors may be more successful than us in obtaining approval for treatments. Our competitors' treatments may be more effective, or more effectively marketed and sold, than any treatment for which we receive marketing approval and may render our approved treatments obsolete or non-competitive before we can recover the expenses of developing and commercializing any of our treatments.

These competitors also compete with us in recruiting and retaining qualified scientific and management personnel and establishing clinical study sites and patient registration for clinical studies, as well as in acquiring technologies complementary to, or necessary for, our programs. Smaller or early-stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies.

In addition, our ability to compete may be affected in many cases by insurers or other third-party payers seeking to encourage the use of different products driven by cost, discounts, or rebates. If our therapeutic product candidates are approved, we expect that they will be priced at a significant premium over competitive generic products. Depending on how successful these competitive efforts are, it is possible they may increase the barriers to adoption and success for our approved product and product candidates.

We anticipate that we will face intense and increasing competition as new drugs enter the market and advanced technologies become available. We expect any treatments that we develop and commercialize to compete on the basis of, among other things, efficacy, safety, customer experience, reliability, convenience of administration and delivery, price and the availability of reimbursement from government and other third-party payers.

These efforts include the following:

Multiple Myeloma. The current standard of care for relapsed and refractory multiple myeloma includes IMIDs (e.g., thalidomide, lenalidomide, pomalidomide), proteasome inhibitors (e.g., bortezomib, carfilzomib, ixazomib), monoclonal antibodies (e.g., daratumamab, isatuximab, elotuzumab), cytotoxic agents, and HSCT. There are several companies developing autologous T cell therapies for relapsed and refractory multiple myeloma that use a similar autologous ex vivo approach, but a different target antigen, BCMA single-chain variable fragment or, we believe, cell processing techniques. These programs include: an anti-BCMA CAR T cell therapy that has been submitted to the FDA in 1Q2021 based on a phase 1b/2 study in the United States (Nanjing Legend in collaboration with Janssen); an anti-BCMA CAR T cell therapy that is in phase 1 study (Poseida Therapeutics, Inc.); an anti-BCMA CAR T cell therapy in clinical development (phase 1) sponsored by BMS following the completion of its acquisition of Juno Therapeutics, Inc and several other anti-BCMA CAR T cell therapies in phase I study, including and not limited to Novartis, Gracell Biotechnologies and Innovent Biologics Inc. In addition to these autologous T cell-based approaches, Allogene Therapeutics, Inc., Poseida, and CRISPR Therapeutics have disclosed preclinical and clinical programs for allogeneic BCMA targeted CAR T cell therapies. There are also therapies using other modalities being developed by several groups, including multiple bispecific T cell engagers, including programs currently in clinical studies supported by Amgen, Regeneron, Janssen, AbbVie, and BMS, as well as a specific antibody therapy currently in a phase 1 study supported by Pfizer, Inc., and a commercially approved antibody drug conjugate therapy supported by GSK.

B Cell Non-Hodgkin's Lymphoma. The current standard of care for majority of non-Hodgkin's lymphoma, or NHL, is focused around CD20 immunotherapy, mainly rituximab, combined with chemotherapy agents such as bendamustine or the four-drug cyclophosphamide, doxorubicin, vincristine and prednisone (CHOP) regimen as the

first-line option; patients with certain mutations may receive a different chemotherapy cocktail called EPOCH. As patients fail these therapies and reach the relapsed/refractory setting, patients who are eligible for stem cell transplant typically receive CD20 antibodies and high-dose chemotherapy followed by autologous stem cell transplantation. The immunomodulatory drug lenalidomide may be used in combination with rituximab for such patients who are not eligible for high-dose chemotherapy. CD19 chimeric antigen receptor (CAR T) cell therapies tisagenlecleucel and axicabtagene ciloleucel were both approved in 2017 and lisocabtagene maraleucel was approved and launched in 2021 as therapies for NHL in relapsed/refractory patients. As many as 60 development programs for NHL therapies are in phase 1 through phase 3 trials in the US, including over 15 CAR T cell therapies, most of which target CD19. Among these programs are two dual targeting assets: Miltenyi's CD19/20 targeting CAR T in a Phase 1/2 trial and Autolus Therapeutics' AUTO3, a CD19/22 dual targeting CAR T for relapsed/refractory NHL in an ongoing phase 1/2 trial in the US with promising early data. Most cell therapies, marketed or in the clinic, are exploring patient populations across the treatment paradigm with expectations of replacing current standard of care and procuring expanded labels. In addition to autologous therapies, efforts are ongoing for allogeneic platforms that offer "off-the-shelf" advantage with the option of potentially treating greater number of patients over currently marketed CARs. Allo-501 has shown promising preliminary data in R/R NHL including patients failed on or refractory to prior CARs. Beyond cell therapies, Roche's anti-body drug conjugate, polatuzumab received approval in relapsed/refractory NHL in the US in 2019 and a broader EMA approval in patients not eligible for stem cell transplant. Morphosys' tafasitamab, a CD-19 targeted antibody, was approved and launched in 2020 in the US in combination with lenalidomide for patients with relapsed or refractory disease. Bispecific antibody therapies including Regeneron's REGN1979 (CD20 X CD3) are also attracting interest with recent promising data not only in relapsed/refractory patients but also in patients previously treated with a CAR T, in a phase 1 trial.

Acute Myeloid Leukemia. The current standard of care for acute myeloid leukemia, or AML, has changed in the last few years following a host of new small molecule and monoclonal antibody approvals since 2017: midostaurin (commercialized by Novartis), ribosomal daunorubicin and cytarabine (commercialized by Jazz Pharmaceuticals), enasidenib (commercialized by BMS and Agios Therapeutics, Inc.), gemtuzumab ozogamicin (commercialized by Pfizer), ivosidenib (commercialized by Agios Pharmaceuticals), gilteritinib (commercialized by Astellas Pharma), venetoclax (commercialized by AbbVie and Genentech), and glasdegib (commercialized by Pfizer). Many of these drugs are first in class and some are biomarker driven, resulting in more segmentation in the AML treatment paradigm. There are several groups exploring autologous CAR T therapies in phase 1 trials for relapsed and refractory AML, some against targets that have approved monoclonal antibody competitors on the market already, while others have novel targets. Dual targeting CAR T cell-based approaches are also starting to enter the clinic, including the CD33/CLL-1 targeting CAR Ts being developed by iCell Gene Therapeutics and Legend Biotech. Other groups are exploring TCR-based autologous therapies against novel targets. In addition to autologous cell therapies, there are allogeneic CAR T cell therapies in early trials for AML, including MB-102 in a phase 1 trial being developed by Mustang Bio, Inc, and UCART123 in a phase 1 trial being developed by Cellectis as well as NK cell-based therapies. Other modalities, such as bispecific antibodies and antibody-drug conjugates are also in development across a wide range of targets.

Other Cell and Gene-Based Immunotherapies in Oncology. Hundreds of academic laboratories, biotechnology and pharmaceutical companies are researching and developing cell-based immunotherapies in oncology, in addition to the programs described above. These include and are not limited to Novartis AG, Adaptimmune Inc., Bristol-Myers Squibb Inc., Gilead Sciences, Inc., Pfizer Inc., Amgen, Inc., Sanofi, and Takeda among others. Many of the cell-based immunotherapy programs being developed by these companies are in phase 1/2 clinical trials for multiple indications in hematologic and solid tumors. Given the complexities of treating heterogeneous solid tumors, early data from cell therapies is very limited and needs extensive exploration and validation. Cancer therapies in other modalities, such as bispecific antibodies, antibody-drug conjugates, and dendritic cell vaccines, as well as combinatorial approaches are also in development across a wide range of targets and pose a competitive threat.

Intellectual Property

We strive to protect and enhance the proprietary technology, inventions, and improvements that are commercially important to the development of our business, including seeking, maintaining, and defending patent rights, whether developed internally or licensed from third parties. We also rely on trade secrets relating to our

proprietary technology platform and on know-how, continuing technological innovation and in-licensing opportunities to develop, strengthen and maintain our proprietary position in the field of gene therapy that may be important for the development of our business. Additionally, we rely on regulatory protection afforded through orphan drug designations, data exclusivity, market exclusivity, and patent term extensions and supplementary protection certificates where available.

Our commercial success may depend in part on our ability to obtain and maintain patent and other proprietary protection for commercially important technology, inventions and know-how related to our business; defend and enforce our patents; preserve the confidentiality of our trade secrets; and operate without infringing the valid enforceable patents and proprietary rights of third parties. Our ability to stop third parties from making, using, selling, offering to sell or importing our products may depend on the extent to which we have valid and enforceable patent rights or trade secrets that cover these activities. With respect to both licensed and company-owned intellectual property, we cannot be sure that patents will be granted with respect to any of our pending patent applications or with respect to any patent applications filed by us in the future, nor can we be sure that any of our existing patents or any patents that may be granted to us in the future will be commercially useful in protecting our commercial products and methods of manufacturing the same.

We have developed or in-licensed numerous patents and patent applications and possess substantial know-how and trade secrets relating to the development and commercialization of gene therapy products. Our proprietary intellectual property, including patent and non-patent intellectual property, is generally directed to, for example, certain genes, transgenes, methods of transferring genetic material into cells, genetically modified cells, processes to manufacture our lentivirus-based product candidates and other proprietary technologies and processes related to our product development candidates. As of April 13, 2021, our patent portfolio includes the following:

- approximately 74 patents or patent applications that we own or have exclusively in-licensed from third parties related to lentiviral vectors and vector manufacturing or production;
- approximately 157 patents or patent applications that we own or have exclusively or co-exclusively in-licensed from third parties related to therapeutic cellular product candidates;
- approximately 466 patents or patent applications that we own or have exclusively in-licensed or optioned from third parties related to oncology product candidates, including CAR T cell vector systems and manufacturing, T cell manufacturing, and therapeutic T cells;
- approximately 165 patents or patent applications that we own or have exclusively or co-exclusively in-licensed from third parties related to gene editing compositions and methods; and
- approximately 2 patent applications that we have non-exclusively in-licensed from third parties related to gene editing compositions and methods.

Our objective is to continue to expand our portfolio of patents and patent applications in order to protect our gene therapy product candidates and manufacturing processes. Examples of the products and technology areas covered by our intellectual property portfolio are described below. See also “—License Agreements.” From time to time, we also evaluate opportunities to sublicense our portfolio of patents and patent applications that we own or exclusively license, and we may enter into such licenses from time to time.

While we maintain patents and patent applications in important foreign markets, such as in Europe, China, and Japan, we do not consider our patent portfolio outside of the United States to be material to 2seventy bio at this time. With respect to the patent portfolios for our commercial-stage product idecabtagene vicleucel, or ide-cel, and our clinical-stage product candidate bb21217, their development and commercialization rights have been exclusively licensed to BMS in exchange for an up-front payment. As a consequence, 2seventy bio will not receive royalties on sales of ide-cel or bb21217 outside of the United States.

In addition, our other oncology programs are preclinical and we have not initiated the clinical trials for these programs either in the United States or elsewhere. As a result, we do not view the patent portfolios for these

programs to be material to 2seventy bio at this time, and do not expect that these patent portfolios will be material upon the completion of the anticipated separation of 2seventy bio from bluebird bio.

Ide-cel, bb21217, and Independent Multiple Myeloma Program

The multiple myeloma programs include the patent portfolios described below. These rights will be assigned or sublicensed to us pursuant to the intellectual property license agreement and other agreements that we intend to enter into with bluebird bio in connection with the separation.

- **Pasteur Institute**. The in-licensed Pasteur patent portfolio contains patents and patent applications directed to FLAP/cPPT elements and lentiviral vectors used to produce ide-cel and bb21217 for multiple myeloma. As of April 13, 2021, we had an exclusive license in the field of oncology (from bluebird bio) to two issued U.S. patents. We expect the issued composition of matter patents to expire in 2022 and 2023 in the United States (excluding possible patent term extensions).

- **RDF.** The in-licensed Research Development Foundation, or RDF, patent portfolio contains the patents and patent applications directed towards aspects of our lentiviral vectors used to produce ide-cel and bb21217 for multiple myeloma. As of April 13, 2021, we had an exclusive license in the field of oncology (bluebird bio) to 10 issued U.S. patents and two pending U.S. patent applications related to our lentiviral vector platform. Corresponding foreign patents related to our lentiviral vector platform include issued patents in Canada, Europe, and Israel. We expect the issued composition of matter patents to expire from 2021-2027 in the United States, and in 2022 in the rest of the world (excluding possible patent term extensions). Further, we expect any other patents in this portfolio, if issued, and if the appropriate maintenance, renewal, annuity or other governmental fees are paid, to expire from 2021-2022 (excluding possible patent term extensions).

- **Biogen**. The in-licensed Biogen Inc. (formerly Biogen Idec MA Inc.; referred to herein as “Biogen”) patent portfolio, contains patents and patent applications directed toward aspects of T cell-based products that target BCMA. As of April 13, 2021, we had a co-exclusive license to five issued U.S. patents, one pending U.S. patent application, 49 issued corresponding foreign patents, and one pending corresponding foreign application related to T cell-based products that target BCMA. We expect the issued composition of matter patents to expire from 2024-2032 (excluding possible patent term extensions). Further, we expect any other patents in this portfolio, if issued, and if the appropriate maintenance, renewal, annuity or other governmental fees are paid, to expire from 2024-2030 (worldwide, excluding possible patent term extensions).

- **NIH**. The in-licensed patent portfolio from National Institutes of Health, or NIH, contains patents and patent applications directed towards aspects of chimeric antigen receptor-based immunotherapies that target BCMA. As of April 13, 2021, we had an exclusive license to 13 issued U.S. patents, 3 pending U.S. patent applications, 20 issued corresponding foreign patents and 19 corresponding foreign patent applications related to chimeric antigen receptor-based immunotherapies that target BCMA and methods of use. We expect the issued composition of matter and methods patents to expire from 2033-2034 (excluding possible patent term extensions). We expect any other patents in this portfolio, if issued, and if the appropriate maintenance, renewal, annuity or other governmental fees are paid, to expire in 2033 (worldwide, excluding possible patent term extensions).

- **2seventy IP**. The owned patent portfolio contains patents and patent applications directed to certain specific compositions of matter for generating CAR T cells. As of April 13, 2021, we owned seven issued U.S. patents, 11 pending U.S. patent applications, 185 corresponding foreign patents, 108 corresponding foreign patent applications, and one pending PCT application. We expect the issued composition of matter and methods patents to expire in 2035 (worldwide, excluding possible patent term extensions). We expect any other patents, if issued from the pending patent applications or a corresponding national stage application, if applicable, and if the appropriate maintenance, renewal, annuity or other governmental fees are paid, to expire from 2035-2040 (worldwide, excluding possible patent term extensions). We expect any other patents in this portfolio, if issued, and if the appropriate maintenance, renewal, annuity, or other

governmental fees are paid, to expire from 2035-2040 (worldwide, excluding possible patent term extensions).

Lentiviral Platform (e.g., Vectors, Manufacturing, and Cell Therapy Products)

The lentiviral platform, which is potentially applicable across our programs in severe genetic disease and oncology, includes the following patent portfolios described below. These rights will be assigned or sublicensed to us pursuant to the intellectual property license agreement and other agreements that we intend to enter into with bluebird bio in connection with the separation.

- **Pasteur Institute.** The Pasteur patent portfolio contains the patents and patent applications described above.
- **RDF.** The in-licensed RDF patent portfolio contains the patents and patent applications described above.
- **SIRION.** The in-licensed patent portfolio from SIRION Biotech GmbH, or SIRION, contains patents and patent applications directed to methods of manufacturing ex vivo gene therapy products with a lentiviral vector. As of April 13, 2021, we had a nonexclusive license in the field of oncology (from bluebird bio) to two issued U.S. patents, one pending U.S. patent application, 23 issued corresponding foreign patents, and two corresponding foreign patent applications. We expect the issued method patents to expire in 2033 (worldwide, excluding possible patent term extensions). We expect any other patents in this portfolio, if issued, and if the appropriate maintenance, renewal, annuity or other governmental fees are paid, to expire in 2033 (worldwide, excluding possible patent term extensions).
- **2seventy IP.** Another component of the owned patent portfolio includes the vector manufacturing platform and is potentially applicable to our oncology programs. This portion of the portfolio contains patent applications directed to improved methods for transfection and transduction of therapeutic cells. As of April 13, 2021, we owned one pending U.S. patent application and one corresponding foreign patent application. We expect composition of matter and method patents, if issued from the pending patent applications and if the appropriate maintenance, renewal, annuity or other governmental fees are paid, to expire in 2038 (worldwide, excluding possible patent term extensions). We expect any other patents in this portfolio, if issued, and if the appropriate maintenance, renewal, annuity, or other governmental fees are paid, to expire in 2038 (worldwide, excluding possible patent term extensions).

Oncology Platform (e.g., T Cell-Based Products)

Our T cell-based oncology platform and oncology research program, which is applicable to our multiple myeloma programs and other potential programs in cancer, includes the following patent portfolios described below. These rights will be assigned or sublicensed to us pursuant to the intellectual property license agreement and other agreements that we intend to enter into with bluebird bio in connection with the separation.

- **Pasteur Institute**. The Pasteur patent portfolio contains the patents and patent applications described above.
- **RDF.** The Pasteur patent portfolio contains the patents and patent applications described above.
- **2seventy IP.** One aspect of the owned patent portfolio contains patent applications directed to certain specific compositions of matter for generating CAR T cells directed against various cancers and improved CAR T cell compositions. As of April 13, 2021, we owned 25 patent families that include three issued U.S. patents, 13 pending U.S. patent applications, three corresponding foreign patents, and 77 corresponding foreign patent applications; four families of pending U.S. provisional applications; and 10 pending PCT applications. We expect the issued composition of matter patent to expire in 2034 (worldwide, excluding possible patent term extensions). We expect any other patents, if issued from a corresponding nonprovisional patent application, the pending patent applications or a corresponding national stage application, if applicable, and if the appropriate maintenance, renewal, annuity or other governmental fees are paid, to expire from 2034-2041 (worldwide, excluding possible patent term extensions). We expect any

other patents in this portfolio, if issued, and if the appropriate maintenance, renewal, annuity, or other governmental fees are paid, to expire from 2034-2041 (worldwide, excluding possible patent term extensions).

- **T Cell Manufacturing Methods License**. We are in the process of in-licensing patents and patent applications that are directed to certain specific methods for generating CAR T cells. As of April 13, 2021, we had a nonexclusive license to two issued U.S. patents, one pending U.S. patent application, and 30 corresponding issued foreign patents. We expect the issued method patents to expire in 2026 (worldwide, excluding possible patent term extensions). We expect any other patents in this portfolio, if issued, and if the appropriate maintenance, renewal, annuity or other governmental fees are paid, to expire in 2026 (excluding possible patent term extensions).

- **T Cell Immunotherapy Product Candidate Licenses.** We are in the process of in-licensing or obtaining assignments to patents and patent applications that are directed to certain specific compositions of matter for generating CAR T cells directed against various cancers and related methods of treatment. As of April 13, 2021, we had an exclusive license to one issued U.S. patent and ten corresponding foreign patents and co-own a pending US application and seven corresponding foreign patent applications to a particular target antigen. We expect the issued composition of matter patent to expire in 2025 (worldwide, excluding possible patent term extensions). We expect any other patents in this portfolio, if issued, and if the appropriate maintenance, renewal, annuity or other governmental fees are paid, to expire in 2036 (worldwide, excluding possible patent term extensions). In addition, as of April 13, 2021, we had an exclusive license to three families of U.S. non-provisional applications and corresponding PCT applications directed to compositions and methods for treating cancers that express particular target antigens. We expect any composition of matter or methods patents, if issued from the pending patent applications or a corresponding national stage application, if applicable, and if the appropriate maintenance, renewal, annuity or other governmental fees are paid, to expire in 2040 (worldwide, excluding possible patent term extensions). We expect any other patents in this portfolio, if issued, and if the appropriate maintenance, renewal, annuity, or other governmental fees are paid, to expire in 2040 (worldwide, excluding possible patent term extensions). Also as of April 13, 2021, we co-owned (with Medigene AG) a PCT application directed to compositions and methods for treating cancers that express a particular antigen. We expect any composition of matter or methods patents, if issued from a corresponding national stage application, if applicable, and if the appropriate, renewal, annuity or other governmental fees are paid, to expire in 2040 (worldwide, excluding possible patent term extensions). We expect any other patents in this portfolio, if issued, and if the appropriate maintenance, renewal, annuity, or other governmental fees are paid, to expire in 2040 (worldwide, excluding possible patent term extensions). Also as of April 13, 2021, we co-owned (with Inhibrx, Inc.) three families of PCT applications directed to compositions and methods for treating cancers that express a particular antigen. We expect any composition of matter or methods patents, if issued from a corresponding national stage application, if applicable, and if the appropriate maintenance, renewal, annuity or other governmental fees are paid, to expire in 2040 (worldwide, excluding possible patent term extensions). We expect any other patents in this portfolio, if issued, and if the appropriate maintenance, renewal, annuity, or other governmental fees are paid, to expire from 2040 (worldwide, excluding possible patent term extensions). Also as of April 13, 2021, we had an option to exclusively license two U.S. patent applications and 7 corresponding foreign patent applications that are directed to compositions and methods for treating cancers that express a particular antigen. We expect any composition of matter or methods patents, if issued, and if the appropriate maintenance, renewal, annuity or other governmental fees are paid, to expire from 2037-2039 (worldwide, excluding possible patent term extensions). We expect any other patents in this portfolio, if issued, and if the appropriate maintenance, renewal, annuity, or other governmental fees are paid, to expire from 2037-2039 (worldwide, excluding possible patent term extensions).

Gene Editing Platform (e.g., homing endonucleases, chimeric endonucleases, megaTALs, genetically modified cells)

The gene editing platform includes the following patent portfolios described below. These rights will be assigned or sublicensed to us pursuant to the intellectual property license agreement and other agreements that we intend to enter into with bluebird bio in connection with the separation.

- **Gene Editing License.** We are in the process of in-licensing patent portfolios that contain patents and patent applications directed to aspects of our gene editing platform to produce genome modifying enzymes and genetically modified cells that are potentially applicable to oncology programs. As of April 13, 2021, we had an exclusive/co-exclusive license to seven issued U.S. patents, one pending U.S. patent application, 26 corresponding foreign patents, and three corresponding patent applications related to our gene editing platform. We expect the issued composition of matter patents to expire in 2030 (worldwide, excluding possible patent term extensions). We expect any other patents in this portfolio, if issued from the pending patent applications and if the appropriate maintenance, renewal, annuity or other governmental fees are paid, to expire in 2030 (worldwide, excluding possible patent term extensions). In addition, as of April 13, 2021, we had an exclusive license to two issued U.S. patents and six corresponding foreign patents related to our gene editing platform. We expect the issued composition of matter patent to expire from 2027-2031 in the United States (excluding possible patent term extensions) and in 2027 in the rest of the world.

- **Academic Gene Editing License**s. We in-licensed patent portfolios from multiple academic medical centers, each portfolio containing patents and patent applications directed to aspects of our gene editing platform to produce genome modifying enzymes and genetically modified cells that are potentially applicable to our oncology programs. As of April 13, 2021, we had an exclusive license to five issued U.S. patents, four pending U.S. patent applications, 15 corresponding foreign patents, and two corresponding patent applications related to our gene editing platform. We expect the issued patent to expire in 2027-2032 (worldwide, excluding possible patent term extensions). We expect any other patents in this portfolio, if issued and if the appropriate maintenance, renewal, annuity or other governmental fees are paid, to expire from 2027-2032 (worldwide, excluding possible patent term extensions). As of April 13, 2021, we also had a non-exclusive license to one issued U.S. patent and one pending U.S. patent application related to our gene editing platform. We expect the issued composition of matter patent to expire in 2035 (excluding possible patent term extensions). We expect any other patents in this portfolio, if issued and if the appropriate maintenance, renewal, annuity or other governmental fees are paid, to expire in 2035 (worldwide, excluding possible patent term extensions).

- **2seventy IP.** One aspect of the owned patent portfolio contains patent applications that are potentially applicable to certain aspects of our gene editing platform to produce genome modifying enzymes and genetically modified cells that are potentially applicable to our oncology and other programs. As of April 13, 2021, we owned 10 patent families that include two issued U.S. patents, 12 pending U.S. patent applications, and 53 corresponding foreign patent applications related to our gene editing platform. We expect the issued composition of matter patent to expire in 2038 (excluding possible patent term extensions). We expect any composition of matter or methods patents, if issued from the pending patent applications, and if the appropriate maintenance, renewal, annuity or other governmental fees are paid, to expire from 2037-2038 (worldwide, excluding possible patent term extensions). We expect any other patents in this portfolio, if issued, and if the appropriate maintenance, renewal, annuity, or other governmental fees are paid, to expire from 2037-2038 (worldwide, excluding possible patent term extensions). As of April 13, 2021, we owned two PCT applications related to our gene editing platform. We expect any composition of matter or methods patents, if issued from a corresponding national stage application, if applicable, and if the appropriate maintenance, renewal, annuity or other governmental fees are paid, to expire from 2039 (worldwide, excluding possible patent term extensions). We expect any other patents in this portfolio, if issued, and if the appropriate maintenance, renewal, annuity, or other governmental fees are paid, to expire from 2039 (worldwide, excluding possible patent term extensions). As of April 13, 2021, we also owned one provisional application related to our gene editing platform. We expect any composition of matter or methods patents, if issued from a corresponding nonprovisional patent application, if applicable, and if the appropriate maintenance, renewal, annuity or other governmental fees

are paid, to expire in 2041 (worldwide, excluding possible patent term extensions). We expect any other patents in this portfolio, if issued, and if the appropriate maintenance, renewal, annuity, or other governmental fees are paid, to expire in 2041 (worldwide, excluding possible patent term extensions). As of April 13, 2021, we co-owned (with Cellectis SA) two issued U.S. patents, 17 corresponding foreign patents, and two corresponding foreign patent applications related to our gene editing platform. We expect the issued composition of matter patent to expire in 2034 (worldwide, excluding possible patent term extensions).We expect any other patents in this portfolio, if issued from the pending patent applications and if the appropriate maintenance, renewal, annuity or other governmental fees are paid, to expire in 2034 (worldwide, excluding possible patent term extensions).

The term of individual patents depends upon the legal term of the patents in the countries in which they are obtained. In most countries in which we file, the patent term is 20 years from the date of filing the non-provisional application. In the United States, a patent's term may be lengthened by patent term adjustment, which compensates a patentee for administrative delays by the U.S. Patent and Trademark Office in granting a patent, or may be shortened if a patent is terminally disclaimed over an earlier expiring patent. Our patents expire at various times over the next 20 years, with patent protection for some expiring from 2021 through 2024. We do not expect such expirations to materially affect our business as the patents set to expire during this time cover intellectual property that is used in combination with other proprietary technologies, which technologies are therefore are covered by patents and patent applications with expiration dates beyond 2024. For these reasons, among others, we believe that no single patent expiration would have a material adverse effect on our business as a whole.

The term of a patent that covers an FDA-approved drug may also be eligible for patent term extension, which permits patent term restoration of a U.S. patent as compensation for the patent term lost during the FDA regulatory review process. The Hatch-Waxman Act permits a patent term extension of up to five years beyond the expiration of the patent. The length of the patent term extension is related to the length of time the drug is under regulatory review. A patent term extension cannot extend the remaining term of a patent beyond a total of 14 years from the date of product approval and only one patent applicable to an approved drug may be extended. Moreover, a patent can only be extended once, and thus, if a single patent is applicable to multiple products, it can only be extended based on one product. Similar provisions are available in Europe and other foreign jurisdictions to extend the term of a patent that covers an approved drug. When possible, depending upon the length of clinical trials and other factors involved in the filing of a BLA, we expect to apply for patent term extensions for patents covering our approved products or methods of using the same.

We may rely, in some circumstances, on trade secrets to protect our technology. However, trade secrets can be difficult to protect. We seek to protect our proprietary technology and processes, in part, by entering into confidentiality agreements with our employees, consultants, scientific advisors and third parties. We also seek to preserve the integrity and confidentiality of our data and trade secrets by maintaining physical security of our premises and physical and electronic security of our information technology systems. While we have confidence in these individuals, organizations and systems, agreements or security measures may be breached, and we may not have adequate remedies for any breach. In addition, our trade secrets may otherwise become known or be independently discovered by competitors. To the extent that our consultants or collaborators use intellectual property owned by others in their work for us, disputes may arise as to the rights in related or resulting know-how and inventions.

License Agreements

We intend to enter into an intellectual property license agreement with bluebird bio prior to the distribution pursuant to which each party will grant a license to certain intellectual property and technology. bluebird bio will grant 2seventy bio a perpetual, worldwide, non-exclusive, royalty-free, fully paid-up license (or, as the case may be, sublicense) to certain intellectual property to allow 2seventy bio to use such intellectual property in connection with 2seventy bio's ongoing and future research and development activities and product candidates. 2seventy bio will grant bluebird bio a perpetual, worldwide, non-exclusive, royalty-free, fully paid-up license (or, as the case may be, sublicense) to certain intellectual property for use in bluebird bio's existing products and product candidates. Such licenses between the parties generally will allow current or future uses of the intellectual property in connection with each party's respective fields.

Government Regulation

In the United States, biological products, including cell and gene therapy products, are subject to regulation under the Federal Food, Drug, and Cosmetic Act, or FD&C Act, and the Public Health Service Act, or PHS Act, and other federal, state, local and foreign statutes and regulations. Both the FD&C Act and the PHS Act and their corresponding regulations govern, among other things, the testing, manufacturing, safety, efficacy, labeling, packaging, storage, record keeping, distribution, reporting, advertising and other promotional practices involving biological products. FDA approval must be obtained before clinical testing of biological products, and each clinical study protocol for a gene therapy product is reviewed by the FDA. FDA approval also must be obtained before marketing of biological products. The process of obtaining regulatory approvals and the subsequent compliance with appropriate federal, state, local and foreign statutes and regulations require the expenditure of substantial time and financial resources and we may not be able to obtain the required regulatory approvals.

Within the FDA, the Center for Biologics Evaluation and Research, or CBER, regulates cell and gene therapy products. CBER works closely with the NIH. The FDA and the NIH have published guidance documents with respect to the development and submission of gene therapy protocols. The FDA also has published guidance documents related to, among other things, gene therapy products in general, their preclinical assessment, observing subjects involved in gene therapy studies for delayed adverse events, potency testing, and chemistry, manufacturing and control information in gene therapy INDs.

Ethical, social and legal concerns about gene therapy, genetic testing and genetic research could result in additional regulations restricting or prohibiting the processes we may use. Federal and state agencies, congressional committees and foreign governments have expressed interest in further regulating biotechnology. More restrictive regulations or claims that our products are unsafe or pose a hazard could prevent us from successfully commercializing our product or any future products. New government requirements may be established that could delay or prevent regulatory approval of our product candidates under development. It is impossible to predict whether legislative changes will be enacted, regulations, policies or guidance changed, or interpretations by agencies or courts changed, or what the impact of such changes, if any, may be.

U.S. Biological Products Development Process

The process required by the FDA before a biological product may be marketed in the United States generally involves the following:

- completion of nonclinical laboratory tests and animal studies according to good laboratory practices, or GLPs, and applicable requirements for the humane use of laboratory animals or other applicable regulations;
- submission to the FDA of an application for an IND, which must become effective before human clinical studies may begin;
- performance of adequate and well-controlled human clinical studies according to the FDA's regulations commonly referred to as good clinical practices, or GCPs, and any additional requirements for the protection of human research subjects and their health information, to establish the safety and efficacy of the proposed biological product for its intended use;
- submission to the FDA of a Biologics License Application, or BLA, for marketing approval that includes substantive evidence of safety, purity, and potency from results of nonclinical testing and clinical studies;
- satisfactory completion of an FDA inspection of the manufacturing facility or facilities where the biological product is produced to assess compliance with GMP, to assure that the facilities, methods and controls are adequate to preserve the biological product's identity, strength, quality and purity and, if applicable, the FDA's current good tissue practices, or GTPs, for the use of human cellular and tissue products;
- potential FDA audit of the nonclinical and clinical study sites that generated the data in support of the BLA; and

- FDA review and approval, or licensure, of the BLA.

Before testing any biological product candidate in humans, the product candidate enters the preclinical testing stage. Preclinical tests, also referred to as nonclinical studies, include laboratory evaluations of product chemistry, toxicity and formulation, as well as animal studies to assess the potential safety and activity of the product candidate. The conduct of the preclinical tests must comply with federal regulations and requirements including GLPs.

The clinical study sponsor must submit the results of the preclinical tests, together with manufacturing information, analytical data, any available clinical data or literature and a proposed clinical protocol, to the FDA as part of the IND. Some preclinical testing may continue even after the IND is submitted. The IND automatically becomes effective 30 days after receipt by the FDA, unless the FDA places the clinical study on a clinical hold within that 30-day time period. In such a case, the IND sponsor and the FDA must resolve any outstanding concerns before the clinical study can begin. A clinical hold may either be a full clinical hold or a partial clinical hold that would limit a trial, for example, to certain doses or for a certain length of time or to a certain number of subjects. The FDA may also impose clinical holds on a biological product candidate at any time before or during clinical studies due to safety concerns or non-compliance. If the FDA imposes a clinical hold, studies may not recommence without FDA authorization and then only under terms authorized by the FDA. Accordingly, we cannot be sure that submission of an IND will result in the FDA allowing clinical studies to begin, or that, once begun, issues will not arise that suspend or terminate such studies.

In addition to the IND submission process, sponsors of certain clinical studies of cells containing recombinant or synthetic nucleic acid molecules, including human gene transfer studies, must comply with the NIH Guidelines for Research Involving Recombinant or Synthetic Nucleic Acid Molecules, or the NIH Guidelines. In the past, where a gene therapy study was conducted at, or sponsored by, institutions receiving NIH funding for recombinant DNA research, prior to the submission of an IND to the FDA, a protocol and related documentation was submitted to and the study was registered with the NIH Office of Biotechnology Activities, or OBA, pursuant to the NIH Guidelines. Pursuant to the current NIH Guidelines, research involving recombinant or synthetic nucleic acid molecules, including cells containing such molecules, must be approved by an institutional biosafety committee, or IBC, a local institutional committee that reviews and oversees basic and clinical research conducted at that institution. The IBC assesses the safety of the research and identifies any potential risk to public health or the environment. Compliance with the NIH Guidelines is mandatory for investigators at institutions receiving NIH funds for research involving recombinant DNA, however many companies and other institutions not otherwise subject to the NIH Guidelines voluntarily follow them. Such trials remain subject to FDA and other clinical trial regulations, and only after FDA, IBC, and other relevant approvals are in place can these protocols proceed.

Clinical studies involve the administration of the biological product candidate to healthy volunteers or patients under the supervision of qualified investigators, generally physicians not employed by or under the study sponsor's control. Clinical studies are conducted under protocols detailing, among other things, the objectives of the clinical study, dosing procedures, subject selection and exclusion criteria, and the parameters to be used to monitor subject safety, including stopping rules that assure a clinical study will be stopped if certain adverse events should occur. Each protocol and any amendments to the protocol must be submitted to the FDA as part of the IND. Clinical studies must be conducted and monitored in accordance with the FDA's regulations comprising the GCP requirements, including the requirement that all research subjects provide informed consent. Further, each clinical study must be reviewed and approved by an IRB at or servicing each institution at which the clinical study will be conducted. An IRB is charged with protecting the welfare and rights of study participants and considers such items as whether the risks to individuals participating in the clinical studies are minimized and are reasonable in relation to anticipated benefits. The IRB also approves the form and content of the informed consent that must be signed by each clinical study subject or his or her legal representative and must monitor the clinical study until completed.

Human clinical studies are typically conducted in three sequential phases that may overlap or be combined:

- Phase 1. The biological product is initially introduced into healthy human subjects and tested for safety. In the case of some products for severe or life-threatening diseases, especially when the product may be too inherently toxic to ethically administer to healthy volunteers, the initial human testing is often conducted in patients who have the disease or condition the product candidate is intended to treat.

- Phase 2. The biological product is evaluated in a limited patient population to identify possible adverse effects and safety risks, to preliminarily evaluate the efficacy of the product for specific targeted diseases and to determine dosage tolerance, optimal dosage and dosing schedule.
- Phase 3. Clinical studies are undertaken to further evaluate dosage, clinical efficacy, potency, and safety in an expanded patient population at geographically dispersed clinical study sites. These clinical studies are intended to establish the overall risk/benefit ratio of the product and provide an adequate basis for product labeling.

Post-approval clinical studies, sometimes referred to as phase 4 clinical studies, may be conducted after initial marketing approval. These clinical studies are used to gain additional experience from the treatment of patients in the intended therapeutic indication, particularly for long-term safety follow-up. The FDA recommends that sponsors observe subjects for potential gene therapy-related delayed adverse events for a 15-year period, including a minimum of five years of annual examinations followed by ten years of annual queries, either in person or by questionnaire, of study subjects.

During all phases of clinical development, regulatory agencies require extensive monitoring and auditing of all clinical activities, clinical data, and clinical study investigators. Annual progress reports detailing the results of the clinical studies must be submitted to the FDA. Written IND safety reports must be promptly submitted to the FDA, the NIH, as applicable, and the investigators for serious and unexpected adverse events, any findings from other studies, tests in laboratory animals or in vitro testing that suggest a significant risk for human subjects, or any clinically important increase in the rate of a serious suspected adverse reaction over that listed in the protocol or investigator brochure. The sponsor must submit an IND safety report within 15 calendar days after the sponsor determines that the information qualifies for reporting. The sponsor also must notify the FDA of any unexpected fatal or life-threatening suspected adverse reaction within seven calendar days after the sponsor's initial receipt of the information. Phase 1, phase 2 and phase 3 clinical studies may not be completed successfully within any specified period, if at all. The FDA or the sponsor or its data safety monitoring board may suspend a clinical study at any time on various grounds, including a finding that the research subjects or patients are being exposed to an unacceptable health risk. Similarly, an IRB can suspend or terminate approval of a clinical study at its institution if the clinical study is not being conducted in accordance with the IRB's requirements or if the biological product has been associated with unexpected serious harm to patients.

Human gene therapy products are a new category of therapeutics. Because this is a relatively new and expanding area of novel therapeutic interventions, there can be no assurance as to the length of the study period, the number of patients the FDA will require to be enrolled in the studies in order to establish the safety, efficacy, purity and potency of human gene therapy products, or that the data generated in these studies will be acceptable to the FDA to support marketing approval.

Concurrent with clinical studies, companies usually complete additional animal studies and must also develop additional information about the physical characteristics of the biological product as well as finalize a process for manufacturing the product in commercial quantities in accordance with GMP requirements. To help reduce the risk of the introduction of adventitious agents with use of biological products, the PHS Act emphasizes the importance of manufacturing control for products whose attributes cannot be precisely defined. The manufacturing process must be capable of consistently producing quality batches of the product candidate and, among other things, the sponsor must develop methods for testing the identity, strength, quality, potency and purity of the final biological product. Additionally, appropriate packaging must be selected and tested and stability studies must be conducted to demonstrate that the biological product candidate does not undergo unacceptable deterioration over its shelf life.

U.S. Review and Approval Processes

After the completion of clinical studies of a biological product, FDA approval of a BLA must be obtained before commercial marketing of the biological product. The BLA must include results of product development, laboratory and animal studies, human studies, information on the manufacture and composition of the product, proposed labeling and other relevant information. In addition, under the Pediatric Research Equity Act, or PREA, as amended, a BLA or supplement to a BLA must contain data to assess the safety and effectiveness of the biological

product for the claimed indications in all relevant pediatric subpopulations and to support dosing and administration for each pediatric subpopulation for which the product is safe and effective. The FDA may grant deferrals for submission of data or full or partial waivers. Unless otherwise required by regulation, PREA does not apply to any biological product for an indication for which orphan designation has been granted. The testing and approval processes require substantial time and effort and there can be no assurance that the FDA will accept the BLA for filing and, even if filed, that any approval will be granted on a timely basis, if at all.

Within 60 days following submission of the application, the FDA reviews a BLA submitted to determine if it is substantially complete before the agency accepts it for filing. The FDA may refuse to file any BLA that it deems incomplete or not properly reviewable at the time of submission and may request additional information. In this event, the BLA must be resubmitted with the additional information. The resubmitted application also is subject to review before the FDA accepts it for filing. Once the submission is accepted for filing, the FDA begins an in-depth substantive review of the BLA. The FDA reviews the BLA to determine, among other things, whether the proposed product is safe and potent, or effective, for its intended use, and has an acceptable purity profile, and whether the product is being manufactured in accordance with GMP to assure and preserve the product's identity, safety, strength, quality, potency and purity. The FDA may refer applications for novel biological products or biological products that present difficult questions of safety or efficacy to an advisory committee, typically a panel that includes clinicians and other experts, for review, evaluation and a recommendation as to whether the application should be approved and under what conditions. The FDA is not bound by the recommendations of an advisory committee, but it considers such recommendations carefully when making decisions. During the biological product approval process, the FDA also will determine whether a Risk Evaluation and Mitigation Strategy, or REMS, is necessary to assure the safe use of the biological product. If the FDA concludes a REMS is needed, the sponsor of the BLA must submit a proposed REMS; the FDA will not approve the BLA without a REMS, if required.

Before approving a BLA, the FDA will inspect the facilities at which the product is manufactured. The FDA will not approve the product unless it determines that the manufacturing processes and facilities are in compliance with GMP requirements and adequate to assure consistent production of the product within required specifications. For a cell or gene therapy product, the FDA also will not approve the product if the manufacturer is not in compliance with the GTPs. These are FDA regulations that govern the methods used in, and the facilities and controls used for, the manufacture of human cells, tissues, and cellular and tissue based products, or HCT/Ps, which are human cells or tissue intended for implantation, transplant, infusion, or transfer into a human recipient. The primary intent of the GTP requirements is to ensure that cell and tissue based products are manufactured in a manner designed to prevent the introduction, transmission and spread of communicable disease. FDA regulations also require tissue establishments to register and list their HCT/Ps with the FDA and, when applicable, to evaluate donors through screening and testing. Additionally, before approving a BLA, the FDA will typically inspect one or more clinical sites to assure that the clinical studies were conducted in compliance with IND study requirements and GCP requirements. To assure GMP, GTP and GCP compliance, an applicant must incur significant expenditure of time, money and effort in the areas of training, record keeping, production, and quality control.

Notwithstanding the submission of relevant data and information, the FDA may ultimately decide that the BLA does not satisfy its regulatory criteria for approval and deny approval. Data obtained from clinical studies are not always conclusive and the FDA may interpret data differently than we interpret the same data. If the agency decides not to approve the BLA in its present form, the FDA will issue a complete response letter that usually describes all of the specific deficiencies in the BLA identified by the FDA. The deficiencies identified may be minor, for example, requiring labeling changes, or major, for example, requiring additional clinical studies. Additionally, the complete response letter may include recommended actions that the applicant might take to place the application in a condition for approval. If a complete response letter is issued, the applicant may either resubmit the BLA, addressing all of the deficiencies identified in the letter, withdraw the application, or request a hearing.

If a product receives regulatory approval, the approval may be significantly limited to specific diseases and dosages or the indications for use may otherwise be limited, which could restrict the commercial value of the product. Further, the FDA may require that certain contraindications, warnings or precautions be included in the product labeling. The FDA may impose restrictions and conditions on product distribution, prescribing, or dispensing in the form of a risk management plan, or otherwise limit the scope of any approval. In addition, the FDA may require post marketing clinical studies, sometimes referred to as phase 4 clinical studies, designed to further

assess a biological product's safety and effectiveness, and testing and surveillance programs to monitor the safety of approved products that have been commercialized.

One of the performance goals agreed to by the FDA under the PDUFA is to review 90% of standard BLAs in 10 months and 90% of priority BLAs in six months, whereupon a review decision is to be made. The FDA does not always meet its PDUFA goal dates for standard and priority BLAs and its review goals are subject to change from time to time. The review process and the PDUFA goal date may be extended by three months if the FDA requests or the BLA sponsor otherwise provides additional information or clarification regarding information already provided in the submission within the last three months before the PDUFA goal date.

Orphan Drug Designation

Under the Orphan Drug Act, the FDA may grant orphan designation to a drug or biological product intended to treat a rare disease or condition, which is generally a disease or condition that affects fewer than 200,000 individuals in the United States, or more than 200,000 individuals in the United States and for which there is no reasonable expectation that the cost of developing and making a drug or biological product available in the United States for this type of disease or condition will be recovered from sales of the product. Orphan product designation must be requested before submitting a new drug application, or NDA, or BLA. After the FDA grants orphan product designation, the identity of the therapeutic agent and its potential orphan use are disclosed publicly by the FDA. Orphan product designation does not convey any advantage in or shorten the duration of the regulatory review and approval process.

If a product that has orphan designation subsequently receives the first FDA approval for the disease or condition for which it has such designation, the product is entitled to orphan product exclusivity, which means that the FDA may not approve any other applications to market the same drug or biological product for the same indication for seven years, except in limited circumstances, such as a showing of clinical superiority to the product with orphan exclusivity. Competitors, however, may receive approval of different products for the indication for which the orphan product has exclusivity or obtain approval for the same product but for a different indication for which the orphan product has exclusivity. Orphan product exclusivity also could block the approval of one of our products for seven years if a competitor obtains approval of the same biological product as defined by the FDA or if our product candidate is determined to be contained within the competitor's product for the same indication or disease. If a drug or biological product designated as an orphan product receives marketing approval for an indication broader than what is designated, it may not be entitled to orphan product exclusivity. Orphan drug status in the European Union has similar, but not identical, benefits.

Expedited Development and Review Programs

The FDA has a Fast Track program that is intended to expedite or facilitate the process for reviewing new drugs and biological products that meet certain criteria. Specifically, new drugs and biological products are eligible for Fast Track designation if they are intended to treat a serious or life-threatening condition and demonstrate the potential to address unmet medical needs for the condition. Fast Track designation applies to the combination of the product and the specific indication for which it is being studied. The sponsor of a new drug or biologic may request the FDA to designate the drug or biologic as a Fast Track product at any time during the clinical development of the product. Unique to a Fast Track product, the FDA may consider for review sections of the marketing application on a rolling basis before the complete application is submitted, if the sponsor provides a schedule for the submission of the sections of the application, the FDA agrees to accept sections of the application and determines that the schedule is acceptable, and the sponsor pays any required user fees upon submission of the first section of the application.

Any product submitted to the FDA for marketing, including under a Fast Track program, may be eligible for other types of FDA programs intended to expedite development and review, such as priority review and accelerated approval. Under the Breakthrough Therapy program, products intended to treat a serious or life-threatening disease or condition may be eligible for the benefits of the Fast Track program when preliminary clinical evidence demonstrates that such product may have substantial improvement on one or more clinically significant endpoints over existing therapies. Additionally, FDA will seek to ensure the sponsor of a breakthrough therapy product receives timely advice and interactive communications to help the sponsor design and conduct a development

program as efficiently as possible. Any product is eligible for priority review if it has the potential to provide safe and effective therapy where no satisfactory alternative therapy exists or a significant improvement in the treatment, diagnosis or prevention of a disease compared to marketed products. The FDA will attempt to direct additional resources to the evaluation of an application for a new drug or biological product designated for priority review in an effort to facilitate the review. Additionally, a product may be eligible for accelerated approval. Drug or biological products studied for their safety and effectiveness in treating serious or life-threatening illnesses and that provide meaningful therapeutic benefit over existing treatments may receive accelerated approval, which means that they may be approved on the basis of adequate and well-controlled clinical studies establishing that the product has an effect on a surrogate endpoint that is reasonably likely to predict a clinical benefit, or on the basis of an effect on a clinical endpoint other than survival or irreversible morbidity. As a condition of approval, the FDA may require that a sponsor of a drug or biological product receiving accelerated approval perform adequate and well-controlled post-marketing clinical studies. In addition, the FDA currently requires as a condition for accelerated approval pre-approval of promotional materials, which could adversely impact the timing of the commercial launch of the product. Fast Track designation, Breakthrough Therapy designation, priority review and accelerated approval do not change the standards for approval but may expedite the development or approval process.

Regenerative Medicine Advanced Therapies Designation

As part of the 21st Century Cures Act, Congress amended the FD&C Act to facilitate an efficient development program for, and expedite review of regenerative medicine advanced therapies, which include cell and gene therapies, therapeutic tissue engineering products, human cell and tissue products, and combination products using any such therapies or products. Regenerative medicine advanced therapies do not include those human cells, tissues, and cellular and tissue based products regulated solely under section 361 of the Public Health Service Act and 21 CFR Part 1271. This program is intended to facilitate efficient development and expedite review of regenerative medicine therapies, which are intended to treat, modify, reverse, or cure a serious or life-threatening disease or condition and qualify for RMAT designation. A drug sponsor may request that FDA designate a drug as a RMAT concurrently with or at any time after submission of an IND. FDA has 60 calendar days to determine whether the drug meets the criteria, including whether there is preliminary clinical evidence indicating that the drug has the potential to address unmet medical needs for a serious or life-threatening disease or condition. A BLA for a regenerative medicine therapy that has received RMAT designation may be eligible for priority review or accelerated approval through use of surrogate or intermediate endpoints reasonably likely to predict long-term clinical benefit, or reliance upon data obtained from a meaningful number of sites. Benefits of RMAT designation also include early interactions with FDA to discuss any potential surrogate or intermediate endpoint to be used to support accelerated approval. A regenerative medicine therapy with RMAT designation that is granted accelerated approval and is subject to post-approval requirements may fulfill such requirements through the submission of clinical evidence from clinical studies, patient registries, or other sources of real world evidence, such as electronic health records; the collection of larger confirmatory data sets; or post-approval monitoring of all patients treated with such therapy prior to its approval.

Post-Approval Requirements

Maintaining compliance with applicable federal, state, and local statutes and regulations requires the expenditure of substantial time and financial resources. Rigorous and extensive FDA regulation of biological products continues after approval, particularly with respect to GMP. We will rely, and expect to continue to rely, on third parties for the production of clinical and commercial quantities of any future products that we may commercialize. Manufacturers of our products are required to comply with applicable requirements in the GMP regulations, including quality control and quality assurance and maintenance of records and documentation. Other post-approval requirements applicable to biological products include reporting of GMP deviations that may affect the identity, potency, purity and overall safety of a distributed product, record-keeping requirements, reporting of adverse effects, reporting updated safety and efficacy information, and complying with electronic record and signature requirements. After a BLA is approved, the product also may be subject to official lot release. As part of the manufacturing process, the manufacturer is required to perform certain tests on each lot of the product before it is released for distribution. If the product is subject to official release by the FDA, the manufacturer submits samples of each lot of product to the FDA together with a release protocol showing a summary of the history of manufacture of the lot and the results of all of the manufacturer’s tests performed on the lot. The FDA also may perform certain

confirmatory tests on lots of some products, such as viral vaccines, before releasing the lots for distribution by the manufacturer. In addition, the FDA conducts laboratory research related to the regulatory standards on the safety, purity, potency, and effectiveness of biological products.

Biological product manufacturers and other entities involved in the manufacture and distribution of approved biological products are required to register their establishments with the FDA and certain state agencies, and are subject to periodic unannounced inspections by the FDA and certain state agencies for compliance with GMPs and other laws. Accordingly, manufacturers must continue to expend time, money, and effort in the area of production and quality control to maintain GMP compliance. Discovery of problems with a product after approval may result in restrictions on a product, manufacturer, or holder of an approved BLA, including withdrawal of the product from the market. In addition, changes to the manufacturing process or facility generally require prior FDA approval before being implemented and other types of changes to the approved product, such as adding new indications and additional labeling claims, are also subject to further FDA review and approval. In addition, companies that manufacture or distribute drug or biological products or that hold approved BLAs must comply with other regulatory requirements, including submitting annual reports, reporting information about adverse drug experiences, and maintaining certain records. Newly discovered or developed safety or effectiveness data may require changes to a drug's approved labeling, including the addition of new warnings and contraindications, and also may require the implementation of other risk management measures, including a REMS or the conduct of post-marketing studies to assess a newly-discovered safety issue.

We also must comply with the FDA's and other jurisdictions' advertising and promotion requirements, such as those related to direct-to-consumer advertising and advertising to healthcare professionals, the prohibition on promoting products for uses or in patient populations that are not described in the product's approved labeling (known as "off-label use"), industry-sponsored scientific and educational activities, and promotional activities involving the internet. Discovery of previously unknown problems or the failure to comply with the applicable regulatory requirements may result in restrictions on the marketing of a product or withdrawal of the product from the market as well as possible civil or criminal sanctions. Failure to comply with the applicable U.S. requirements at any time during the product development process, approval process or after approval, may subject an applicant or manufacturer to administrative or judicial civil or criminal sanctions and adverse publicity. Consequences could include refusal to approve pending applications, withdrawal of an approval, clinical hold, warning or untitled letters, product recalls, product seizures, total or partial suspension of production or distribution, injunctions, fines, refusals of government contracts, mandated corrective advertising or communications with healthcare professionals, debarment, restitution, disgorgement of profits, or civil or criminal penalties. Any agency or judicial enforcement action could have a material adverse effect on us.

U.S. Patent Term Restoration and Marketing Exclusivity

Depending upon the timing, duration and specifics of the FDA approval of the use of our product candidates, some of our U.S. patents may be eligible for limited patent term extension under the Drug Price Competition and Patent Term Restoration Act of 1984, commonly referred to as the Hatch-Waxman Amendments. The Hatch-Waxman Amendments permit a patent restoration term of up to five years as compensation for patent term lost during product development and the FDA regulatory review process. However, patent term restoration cannot extend the remaining term of a patent beyond a total of 14 years from the product's approval date. The patent term restoration period is generally one-half the time between the effective date of an IND and the submission date of a BLA plus the time between the submission date of a BLA and the approval of that application. Only one patent applicable to an approved biological product is eligible for the extension and the application for the extension must be submitted prior to the expiration of the patent. The U.S. PTO, in consultation with the FDA, reviews and approves the application for any patent term extension or restoration. In the future, we may intend to apply for restoration of patent term for one of our currently owned or licensed patents to add patent life beyond its current expiration date, depending on the expected length of the clinical studies and other factors involved in the filing of the relevant BLA.

A biological product can obtain pediatric market exclusivity in the United States. Pediatric exclusivity, if granted, adds six months to existing exclusivity periods and patent terms. This six-month exclusivity, which runs

from the end of other exclusivity protection or patent term, may be granted based on the voluntary completion of a pediatric study in accordance with an FDA-issued "Written Request" for such a study.

The Patient Protection and Affordable Care Act, or Affordable Care Act, signed into law on March 23, 2010, includes a subtitle called the Biologics Price Competition and Innovation Act of 2009 which created an abbreviated approval pathway for biological products shown to be similar to, or interchangeable with, an FDA-licensed reference biological product. This amendment to the PHS Act attempts to minimize duplicative testing. Biosimilarity, which requires that there be no clinically meaningful differences between the biological product and the reference product in terms of safety, purity, and potency, can be shown through analytical studies, animal studies, and a clinical study or studies. Interchangeability requires that a product is biosimilar to the reference product and the product must demonstrate that it can be expected to produce the same clinical results as the reference product and, for products administered multiple times, the biologic and the reference biologic may be switched after one has been previously administered without increasing safety risks or risks of diminished efficacy relative to exclusive use of the reference biologic. However, complexities associated with the larger, and often more complex, structure of biological products, as well as the process by which such products are manufactured, pose significant hurdles to implementation that are still being worked out by the FDA.

A reference biologic is granted twelve years of exclusivity from the time of first licensure of the reference product. The first biologic product submitted under the abbreviated approval pathway that is determined to be interchangeable with the reference product has exclusivity against other biologics submitting under the abbreviated approval pathway for the lesser of (i) one year after the first commercial marketing, (ii) 18 months after approval if there is no legal challenge, (iii) 18 months after the resolution in the applicant's favor of a lawsuit challenging the biologics' patents if an application has been submitted, or (iv) 42 months after the application has been approved if a lawsuit is ongoing within the 42-month period.

Healthcare and Privacy Laws

In addition to restrictions on marketing of pharmaceutical products, several other types of state/ federal laws and trade association membership codes of conduct have been applied to restrict certain marketing practices in the pharmaceutical industry in recent years. These laws include Anti-Kickback and false claims statutes. The U.S. federal healthcare program Anti-Kickback statute prohibits, among other things, knowingly and willfully offering, paying, soliciting or receiving remuneration, directly or indirectly, in cash or in kind, to induce or in return for purchasing, leasing, ordering or arranging for or recommending the purchase, lease or order of any healthcare item or service reimbursable, in whole or in part, under Medicare, Medicaid or other federally financed healthcare programs. This statute has been interpreted to apply to arrangements between pharmaceutical manufacturers on one hand and prescribers, purchasers, and formulary managers on the other. A person or entity need not have actual knowledge of the federal Anti-Kickback Statute or specific intent to violate it in order to have committed a violation. Violations are subject to civil and criminal fines and penalties for each violation, plus up to three times the remuneration involved, imprisonment, and exclusion from government healthcare programs. Although there are a number of statutory exemptions and regulatory safe harbors protecting certain common activities from prosecution, the exemptions and safe harbors are drawn narrowly and practices that involve remuneration to those who prescribe, purchase, or recommend pharmaceutical and biological products, including certain discounts, or engaging healthcare professionals or patients as speakers or consultants, may be subject to scrutiny if they do not fit squarely within the exemption or safe harbor. Our practices may not in all cases meet all of the criteria for safe harbor protection from anti-kickback liability. Moreover, there are no safe harbors for many common practices, such as educational and research grants or patient assistance programs.

The U.S. federal civil False Claims Act prohibits, among other things, any person from knowingly presenting, or causing to be presented, a false or fraudulent claim for payment of government funds, or knowingly making, using, or causing to be made or used, a false record or statement material to an obligation to pay money to the government or knowingly concealing or knowingly and improperly avoiding, decreasing, or concealing an obligation to pay money to the federal government. Manufacturers can be held liable under the False Claims Act even when they do not submit claims directly to government payers if they are deemed to "cause" the submission of false or fraudulent claims. The False Claims Act also permits a private individual acting as a "whistleblower" to bring actions on behalf of the federal government alleging violations of the False Claims Act and to share in any

monetary recovery. In recent years, several pharmaceutical and other healthcare companies have faced enforcement actions under the federal False Claims Act for, among other things, allegedly submitting false or misleading pricing information to government health care programs and providing free product to customers with the expectation that the customers would bill federal programs for the product. Other companies have faced enforcement actions for causing false claims to be submitted because of the company's marketing the product for unapproved, and thus non-reimbursable, uses. Federal enforcement agencies also have showed increased interest in pharmaceutical companies' product and patient assistance programs, including reimbursement and co-pay support services, and a number of investigations into these programs have resulted in significant civil and criminal settlements. In addition, the Affordable Care Act amended federal law to provide that the government may assert that a claim including items or services resulting from a violation of the federal Anti-Kickback statute constitutes a false or fraudulent claim for purposes of the federal civil False Claims Act. Criminal prosecution is possible for making or presenting a false or fictitious or fraudulent claim to the federal government.

The Health Insurance Portability and Accountability Act of 1996, or HIPAA, also created several new federal crimes, including healthcare fraud and false statements relating to healthcare matters. The healthcare fraud statute prohibits knowingly and willfully executing a scheme to defraud any healthcare benefit program, including private third-party payers. The false statements statute prohibits knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false, fictitious or fraudulent statement in connection with the delivery of or payment for healthcare benefits, items or services. Similar to the federal Anti-Kickback Statute, a person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation.

The U.S. federal Physician Payment Sunshine Act, being implemented as the Open Payments Program, requires certain manufacturers of drugs, devices, biologics and medical supplies to engage in extensive tracking of payments and other transfers of value to prescribers and teaching hospitals, including physician ownership and investment interests, and public reporting of such data. Effective January 1, 2022, these reporting obligations will extend to include transfers of value made to certain non-physician providers such as physician assistants and nurse practitioners. Pharmaceutical and biological manufacturers with products for which payment is available under Medicare, Medicaid or the State Children's Health Insurance Program are required to track such payments, and must submit a report on or before the 90th day of each calendar year disclosing reportable payments made in the previous calendar year. A number of other countries, states and municipalities have also implemented additional payment tracking and reporting requirements, which if not done correctly may result in additional penalties.

In addition, the U.S. Foreign Corrupt Practices Act, or the FCPA, prohibits corporations and individuals from engaging in certain activities to obtain or retain business or to influence a person working in an official capacity. It is illegal to pay, offer to pay or authorize the payment of anything of value to any official of another country, government staff member, political party or political candidate in an attempt to obtain or retain business or to otherwise influence a person working in that capacity. In many other countries, healthcare professionals who prescribe pharmaceuticals are employed by government entities, and the purchasers of pharmaceuticals are government entities. Our dealings with these prescribers and purchasers may be subject to the FCPA.

Other countries, including a number of EU member states, have laws of similar application, including anti-bribery or anti-corruption laws such as the UK Bribery Act. The UK Bribery Act prohibits giving, offering, or promising bribes to any person, as well as requesting, agreeing to receive, or accepting bribes from any person. Under the UK Bribery Act, a company that carries on a business or part of a business in the United Kingdom may be held liable for bribes given, offered or promised to any person in any country by employees or other persons associated with the company in order to obtain or retain business or a business advantage for the company. Liability under the UK Bribery Act is strict, but a defense of having in place adequate procedures designed to prevent bribery is available.

HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act of 2009, or HITECH and their respective implementing regulations, including the Final Omnibus Rule published in January 2013, impose requirements on certain covered healthcare providers, health plans, and healthcare clearinghouses as well as their respective business associates that perform services for them that involve the use, or disclosure of, individually identifiable health information, relating to the privacy, security and transmission of individually

identifiable health information. HITECH also created new tiers of civil monetary penalties, amended HIPAA to make civil and criminal penalties directly applicable to business associates, and gave state attorneys general new authority to file civil actions for damages or injunctions in federal courts to enforce the federal HIPAA laws and seek attorneys' fees and costs associated with pursuing federal civil actions. In California the California Consumer Protection Act ("CCPA"), which went into effect on January 1, 2020, establishes a new privacy framework for covered businesses by creating an expanded definition of personal information, establishing new data privacy rights for consumers in the State of California, imposing special rules on the collection of consumer data from minors, and creating a new and potentially severe statutory damages framework for violations of the CCPA and for businesses that fail to implement reasonable security procedures and practices to prevent data breaches. While clinical trial data and information governed by HIPAA are currently exempt from the current version of the CCPA, other personal information may be applicable and possible changes to the CCPA may broaden its scope.

The majority of states also have statutes or regulations similar to the federal anti-kickback and false claims laws, which apply to items and services reimbursed under Medicaid and other state programs, or, in several states, apply regardless of the payer. Several states now require pharmaceutical companies to report expenses relating to the marketing and promotion of pharmaceutical products in those states and to report gifts and payments to individual health care providers in those states. Some of these states also prohibit certain marketing-related activities including the provision of gifts, meals, or other items to certain health care providers. In addition, some state laws require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government in addition to requiring manufacturers to report information related to payments to physicians and other healthcare providers, marketing expenditures, and drug pricing information. Certain state and local laws require the registration of pharmaceutical sales representatives. State and foreign laws, including for example the European Union General Data Protection Regulation, also govern the privacy and security of health information in some circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts.

Because of the breadth of these various healthcare and privacy laws, it is possible that some of our business activities could be subject to challenge under one or more of such laws. Such a challenge could have material adverse effects on our business, financial condition and results of operations. In the event governmental authorities conclude that our business practices do not comply with current or future statutes, regulations or case law involving applicable fraud and abuse or other healthcare and privacy laws and regulations, they may impose sanctions under these laws, which are potentially significant and may include civil monetary penalties, damages, exclusion of an entity or individual from participation in government health care programs, criminal fines and imprisonment, as well as the potential curtailment or restructuring of our operations. Even if we are not determined to have violated these laws, government investigations into these issues typically require the expenditure of significant resources and generate negative publicity, which could harm our financial condition and divert the attention of our management from operating our business.

Government Regulation Outside of the United States

In addition to regulations in the United States, we will be subject to a variety of regulations in other jurisdictions governing, among other things, clinical studies and any commercial sales and distribution of our products. Because biologically sourced raw materials are subject to unique contamination risks, their use may be restricted in some countries.

Whether or not we obtain FDA approval for a product, we must obtain the requisite approvals from regulatory authorities in foreign countries prior to the commencement of clinical studies or marketing of the product in those countries. Certain countries outside of the United States have a similar process that requires the submission of a clinical trial application, or CTA, much like the IND prior to the commencement of human clinical studies. In the European Union, for example, a CTA must be submitted for each clinical trial to each country's national health authority and an independent ethics committee, much like the FDA and the IRB, respectively. Once the CTA is approved in accordance with a country's requirements, the corresponding clinical study may proceed.

The requirements and process governing the conduct of clinical studies, product licensing, pricing and reimbursement vary from country to country. In all cases, the clinical studies are conducted in accordance with GCP

and the applicable regulatory requirements and the ethical principles that have their origin in the Declaration of Helsinki.

To obtain regulatory approval of an investigational product under European Union regulatory systems, we must submit a marketing authorization application. The application used to file the BLA in the United States is similar to that required in the European Union, with the exception of, among other things, region-specific document requirements. The EMA has established the Adaptive Pathways pilot program intended to expedite or facilitate either an initial approval of a medicinal product in a well-defined patient subgroup with a high medical need and subsequent iterative expansion of the indication to a larger patient population, or an early regulatory approval (e.g., conditional approval), which is prospectively planned, and where uncertainty is reduced through the collection of post-approval data on a medicinal product's use in patients. The approach builds in regulatory processes already in place within the existing EU legal framework.

The European Union also provides opportunities for market exclusivity. For example, in the European Union, upon receiving marketing authorization, innovative medicinal products generally receive eight years of data exclusivity and an additional two years of market exclusivity. If granted, data exclusivity prevents regulatory authorities in the European Union from referencing the innovator's data to assess a generic or biosimilar application during such eight-year period starting from the date of grant of the innovative medicinal product's marketing authorization. During the additional two-year period of market exclusivity, a generic or biosimilar marketing authorization application can be submitted, and the innovator's data may be referenced, but no generic or biosimilar product can be marketed until the expiration of the market exclusivity (and the grant of the relevant generic or biosimilar marketing authorization). However, there is no guarantee that a product will be considered by the European Union's regulatory authorities to be an innovative medicinal product, and products may not qualify for data exclusivity. Products receiving orphan designation in the European Union and being granted a marketing authorization for an orphan medicinal product can receive ten years of market exclusivity, during which time no similar medicinal product for the same indication may be placed on the market. An orphan product can also obtain an additional two years of market exclusivity in the European Union where the application for a marketing authorization includes the results of all studies conducted in accordance with an agreed pediatric investigation plan for pediatric studies. No extension to any supplementary protection certificate can be granted on the basis of pediatric studies for orphan indications.

The criteria for designating an "orphan medicinal product" in the European Union are similar in principle to those in the United States. Under Article 3 of Regulation (EC) 141/2000, a medicinal product may be designated as orphan if (1) it is intended for the diagnosis, prevention or treatment of a life-threatening or chronically debilitating condition; (2) either (a) such condition affects no more than five in 10,000 persons in the European Union when the application is made, or (b) the product, without the benefits derived from orphan status, would not generate sufficient return in the European Union to justify investment; and (3) there exists no satisfactory method of diagnosis, prevention or treatment of such condition authorized for marketing in the European Union, or if such a method exists, the product will be of significant benefit to those affected by the condition, as defined in Regulation (EC) 847/2000. Orphan medicinal products are eligible for financial incentives such as reduction of fees or fee waivers and are, upon grant of a marketing authorization, entitled to ten years of market exclusivity for the approved therapeutic indication. The application for orphan drug designation must be submitted before the application for marketing authorization. The applicant will receive a fee reduction for the marketing authorization application if the orphan drug designation has been granted, but not if the designation is still pending at the time the marketing authorization is submitted. Orphan drug designation itself does not convey any advantage in, or shorten the duration of, the regulatory review and approval process.

The 10-year market exclusivity may be reduced to six years if, at the end of the fifth year, it is established that the product no longer meets the criteria for orphan designation, for example, if the product is sufficiently profitable not to justify maintenance of market exclusivity. Additionally, marketing authorization may be granted to a similar product for the same indication at any time if:

- The second applicant can establish that its product, although similar, is safer, more effective or otherwise clinically superior;

- The applicant consents to a second orphan medicinal product application; or
- The applicant cannot supply enough orphan medicinal product.

In the EU, the advertising and promotion of our products will also be subject to EU member states' laws concerning promotion of medicinal products, interactions with physicians, misleading and comparative advertising and unfair commercial practices, as well as other EU member state legislation that may apply to the advertising and promotion of medicinal products. These laws require that promotional materials and advertising in relation to medicinal products comply with the product's approved labeling. The off-label promotion of medicinal products is prohibited in the EU. The applicable laws at the EU level and in the individual EU member states also prohibit the direct-to-consumer advertising of prescription-only medicinal products. Violations of the rules governing the promotion of medicinal products in the EU could be penalized by administrative measures, fines and imprisonment. These laws may further limit or restrict communications concerning the advertising and promotion of our products to the general public and may also impose limitations on our promotional activities with healthcare professionals.

Failure to comply with the EU member state laws implementing the Community Code on medicinal products, and EU rules governing the promotion of medicinal products, interactions with physicians, misleading and comparative advertising and unfair commercial practices, with the EU member state laws that apply to the promotion of medicinal products, statutory health insurance, bribery and anti-corruption or with other applicable regulatory requirements can result in enforcement action by the EU member state authorities (or in addition, in some member states, enforcement action from industry bodies or legal action from competitors), which may include any of the following: fines, imprisonment, orders forfeiting products or prohibiting or suspending their supply to the market, or requiring the manufacturer to issue public warnings, or to conduct a product recall.

The national laws of certain EU member states require payments made to physicians to be publicly disclosed. Moreover, the European Federation of Pharmaceutical Industries and Associations, or EFPIA, Code on disclosure of transfers of value from pharmaceutical companies to healthcare professionals and healthcare organizations imposes a general obligation on members of the EFPIA or related national industry bodies to disclose transfers of value to healthcare professionals. In addition, agreements with physicians must often be the subject of prior notification and approval by the physician's employer, his/her competent professional organization, and/or the competent authorities of the individual EU member states. These requirements are provided in the national laws, industry codes, or professional codes of conduct, applicable in the EU member states.

For other countries outside of the EU, such as countries in Eastern Europe, Central and South America or Asia, the requirements governing the conduct of clinical trials, product licensing, pricing and reimbursement vary from country to country. This act could have implications for our interactions with physicians in and outside the UK. In all cases, again, the clinical trials are conducted in accordance with GCP, applicable regulatory requirements, and ethical principles that have their origin in the Declaration of Helsinki.

If we fail to comply with applicable foreign regulatory requirements, we may be subject to, among other things, warning letters or untitled letters, injunctions, civil, administrative, or criminal penalties, monetary fines or imprisonment, suspension or withdrawal of regulatory approvals, suspension of ongoing clinical studies, refusal to approve pending applications or supplements to applications filed by us, suspension or the imposition of restrictions on operations, product recalls, the refusal to permit the import or export of our products or the seizure or detention of products.

Pricing, Coverage and Reimbursement

In the United States and markets in other countries, patients generally rely on third-party payers to reimburse all or part of the costs associated with their treatment. Adequate coverage and reimbursement from governmental healthcare programs, such as Medicare and Medicaid, and commercial payers is critical to new product acceptance. Our ability to successfully commercialize our product candidates will depend in part on the extent to which coverage and adequate reimbursement for these products and related treatments will be available from government health administration authorities, private health insurers and other organizations. Government authorities and third-party payers, such as private health insurers and health maintenance organizations, decide which medications they will pay for and establish reimbursement levels. If coverage and adequate reimbursement is not available, or is available

only to limited levels, we may not be able to successfully commercialize our product candidates. Even if coverage is provided, the approved reimbursement amount may not be high enough to allow us to establish or maintain pricing sufficient to realize a sufficient return on our investment.

Significant uncertainty exists as to the coverage and reimbursement status of any drug products for which we obtain regulatory approval. In the United States, the principal decisions about reimbursement for new medicines are typically made by the Centers for Medicare & Medicaid Services, or CMS, an agency within the U.S. Department of Health and Human Services. CMS decides whether and to what extent a new medicine will be covered and reimbursed under Medicare and private payers tend to follow CMS to a substantial degree. However, no uniform policy of coverage and reimbursement for drug products exists among third-party payers. Therefore, coverage and reimbursement for drug products can differ significantly from payer to payer. The process for determining whether a payer will provide coverage for a drug product may be separate from the process for setting the price or reimbursement rate that the payer will pay for the drug product. Third-party payers may limit coverage to specific drug products on an approved list, or formulary, which might not include all of the FDA-approved drugs for a particular indication. Third-party payers may provide coverage, but place stringent limitations on such coverage, such as requiring alternative treatments to be tried first. These third-party payers are increasingly challenging the price and examining the medical necessity and cost-effectiveness of medical products and services, in addition to their safety, efficacy, and overall value. In addition, significant uncertainty exists as to the reimbursement status of newly approved healthcare products. We may need to conduct expensive pharmacoeconomic studies in order to demonstrate the medical necessity and cost-effectiveness of our products, in addition to incurring the costs required to obtain FDA approvals. Our product candidates may not be considered medically reasonable or necessary or cost-effective. Factors payors consider in determining reimbursement are based on whether the product is:

- a covered benefit under its health plan;
- safe, effective and medically necessary;
- appropriate for the specific patient;
- cost-effective; and
- neither experimental nor investigational.

Different pricing and reimbursement schemes exist in other countries. In the EU, governments influence the price of drug products through their pricing and reimbursement rules and control of national health care systems that fund a large part of the cost of those products to consumers. Some jurisdictions operate systems under which products may be marketed only after a reimbursement price has been agreed. To obtain reimbursement or pricing approval, some of these countries may require the completion of studies or analyses of clinical trials that compare the cost-effectiveness of a particular product candidate to currently available therapies. Other member states allow companies to set their own prices for medicines, but exert cost controls in other ways, including but not limited to, placing revenue caps on product sales, providing reimbursement for only a subset of eligible patients, mandating price negotiations after a set period of time, or mandating that prices not exceed an average basket of prices in other countries. The downward pressure on health care costs in general, particularly treatments, has become very intense. As a result, increasingly high barriers are being erected to the entry of new products. In addition, European governments may periodically review and decrease prices based on factors, including but not limited to, years-on-market, price in other countries, competitive entry, new clinical data, lack of supporting clinical data, or other factors.

The marketability of any products for which we receive regulatory approval for commercial sale may suffer if the government and third-party payers fail to provide adequate coverage and reimbursement. In addition, the emphasis on managed care in the United States has increased and we expect will continue to exert downward pressure on pharmaceutical pricing. Coverage policies, third-party reimbursement rates and pharmaceutical pricing regulations may change at any time. Even if favorable coverage and reimbursement status is attained for one or more products for which we receive regulatory approval, less favorable coverage policies and reimbursement rates may be implemented in the future.

Healthcare Reform

Payers, whether domestic or foreign, or governmental or private, are developing increasingly sophisticated methods of controlling healthcare costs and those methods are not always specifically adapted for new technologies such as gene therapy and therapies addressing rare diseases such as those we are developing. In both the United States and certain foreign jurisdictions, there have been a number of legislative and regulatory changes to the health care system that could impact our ability to sell our products profitably. In particular, in 2010, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act of 2010, or collectively, the ACA, was enacted, which, among other things, subjected biologic products to potential competition by lower-cost biosimilars; addressed a new methodology by which rebates owed by manufacturers under the Medicaid Drug Rebate Program are calculated for drugs that are inhaled, infused, instilled, implanted or injected; increased the minimum Medicaid rebates owed by most manufacturers under the Medicaid Drug Rebate Program; extended the Medicaid Drug Rebate program to utilization of prescriptions of individuals enrolled in Medicaid managed care organizations; subjected manufacturers to new annual fees and taxes for certain branded prescription drugs; created a new Medicare Part D coverage gap discount program, in which manufacturers must agree to offer 50% (increased to 70% pursuant to the Bipartisan Budget Act of 2018, effective as of January 1, 2019) point-of-sale discounts off negotiated prices of applicable brand drugs to eligible beneficiaries during their coverage gap period, as a condition for the manufacturer's outpatient drugs to be covered under Medicare Part D; and provided incentives to programs that increase the federal government's comparative effectiveness research.

Since its enactment, there have been numerous judicial, administrative, executive, and legislative challenges to certain aspects of the ACA, and we expect there will be additional challenges and amendments to the ACA in the future. For example, various portions of the ACA are currently undergoing legal and constitutional challenges in the United States Supreme Court. Additionally, the former Trump Administration issued various Executive Orders which eliminated cost sharing subsidies and various provisions that would impose a fiscal burden on states or a cost, fee, tax, penalty or regulatory burden on individuals, healthcare providers, health insurers, or manufacturers of pharmaceuticals or medical devices and Congress has introduced several pieces of legislation aimed at significantly revising or repealing the ACA. It is unclear whether the ACA will be overturned, repealed, replaced, or further amended. We cannot predict what affect further changes to the ACA would have on our business, especially given the new administration.

Federal, state and local governments in the United States and foreign governments continue to consider other legislation to limit the growth of healthcare costs, including the cost of prescription drugs. Specifically, there have been several recent U.S. Congressional inquiries and proposed federal and state legislation designed to, among other things, bring more transparency to drug pricing, reduce the cost of prescription drugs under Medicare, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for drugs. In August 2011, the Budget Control Act of 2011, among other things, created measures for spending reductions by Congress. A Joint Select Committee on Deficit Reduction, tasked with recommending a targeted deficit reduction of at least $1.2 trillion for the years 2013 through 2021, was unable to reach required goals, thereby triggering the legislation's automatic reduction to several government programs. This includes aggregate reductions of Medicare payments to providers up to 2% per fiscal year, and, due to subsequent legislative amendments, will remain in effect through 2030 unless additional Congressional action is taken. Pursuant to the Coronavirus Aid, Relief, and Economic Security Act, also known as the CARES Act, as well as subsequent legislation, these reductions have been suspended from May 1, 2020 through December 31, 2021 due to the COVID-19 pandemic. On January 2, 2013, the American Taxpayer Relief Act of 2012 was signed into law, which, among other things, further reduced Medicare payments to several types of providers and increased the statute of limitations period for the government to recover overpayments to providers from three to five years. Future legislation could limit payments for pharmaceuticals such as the drug candidates that we are developing.

The former Trump administration's budget proposal for fiscal year 2021 included a $135 billion allowance to support legislative proposals seeking to reduce drug prices, increase competition, lower out-of-pocket drug costs for patients, and increase patient access to lower-cost generic and biosimilar drugs. On March 10, 2020, the former Trump administration sent "principles" for drug pricing to Congress, calling for legislation that would, among other things, cap Medicare Part D beneficiary out-of-pocket pharmacy expenses, provide an option to cap Medicare Part D beneficiary monthly out-of-pocket expenses, and place limits on pharmaceutical price increases. Further, the former

Trump administration also previously released a “Blueprint” to lower drug prices and reduce out of pocket costs of drugs that contains additional proposals to increase manufacturer competition, increase the negotiating power of certain federal healthcare programs, incentivize manufacturers to lower the list price of their products and reduce the out of pocket costs of drug products paid by consumers. The U.S. Department of Health and Human Services, or HHS, has already started the process of soliciting feedback on some of these measures and, at the same time, is immediately implementing others under its existing authority. For example, in May 2019, CMS issued a final rule to allow Medicare Advantage Plans the option of using step therapy for Part B drugs beginning January 1, 2020. However, it is unclear whether the Biden administration will challenge, reverse, revoke or otherwise modify these executive and administrative actions after January 20, 2021.

In 2020, former President Trump announced several executive orders related to prescription drug pricing that sought to implement several of the former administration's proposals. In response, the FDA released a final rule on September 24, 2020, which went into effect on November 30, 2020, providing guidance for states to build and submit importation plans for drugs from Canada. Further, on November 20, 2020 CMS issued an Interim Final Rule implementing the Most Favored Nation, or MFN, Model under which Medicare Part B reimbursement rates will be calculated for certain drugs and biologicals based on the lowest price drug manufacturers receive in Organization for Economic Cooperation and Development countries with a similar gross domestic product per capita. The MFN Model regulations mandate participation by identified Part B providers and would have applied to all U.S. states and territories for a seven-year period beginning January 1, 2021, and ending December 31, 2027. However, in response to a lawsuit filed by several industry groups, on December 28, the U.S. District Court for the Northern District of California issued a nationwide preliminary injunction enjoining government defendants from implementing the MFN Rule pending completion of notice-and-comment procedures under the Administrative Procedure Act. On January 13, 2021, in a separate lawsuit brought by industry groups in the U.S. District of Maryland, the government defendants entered a joint motion to stay litigation on the condition that the government would not appeal the preliminary injunction granted in the U.S. District Court for the Northern District of California and that performance for any final regulation stemming from the MFN Interim Final Rule shall not commence earlier than 60 days after publication of that regulation in the Federal Register. Further, authorities in Canada have passed rules designed to safeguard the Canadian drug supply from shortages. If implemented, importation of drugs from Canada and the MFN Model may materially and adversely affect the price we receive for any of our product candidates. Additionally, on December 2, 2020, HHS published a regulation removing safe harbor protection for price reductions from pharmaceutical manufacturers to plan sponsors under Part D, either directly or through pharmacy benefit managers, unless the price reduction is required by law. The rule also creates a new safe harbor for price reductions reflected at the point-of-sale, as well as a safe harbor for certain fixed fee arrangements between pharmacy benefit managers and manufacturers. Pursuant to an order entered by the U.S. District Court for the District of Columbia, the portion of the rule eliminating safe harbor protection for certain rebates related to the sale or purchase of a pharmaceutical product from a manufacturer to a plan sponsor under Medicare Part D has been delayed to January 1, 2023. Further, implementation of this change and new safe harbors for point-of-sale reductions in price for prescription pharmaceutical products and pharmacy benefit manager service fees are currently under review by the Biden administration and may be amended or repealed. Although a number of these and other proposed measures may require authorization through additional legislation to become effective, and the Biden administration may reverse or otherwise change these measures, Congress has indicated that it will continue to seek new legislative measures to control drug costs.

Further, on May 30, 2018, the Right to Try Act, was signed into law. The law, among other things, provides a federal framework for certain patients to access certain investigational new drug products that have completed a Phase 1 clinical trial and that are undergoing investigation for FDA approval. Under certain circumstances, eligible patients can seek treatment without enrolling in clinical trials and without obtaining FDA permission under the FDA expanded access program. There is no obligation for a pharmaceutical manufacturer to make its drug products available to eligible patients as a result of the Right to Try Act.

At the state level, legislatures have increasingly passed legislation and implemented regulations designed to control pharmaceutical product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, designed to encourage importation from other countries and bulk purchasing.

Facilities

Following the separation, our corporate offices will be located at 60 Binney Street, Cambridge, Massachusetts, where we will occupy approximately 253,108 rentable square feet of office and laboratory space under a lease that expires on March 31, 2027. We believe our facility is sufficient to meet our current needs until the expiration of our lease and that suitable space will be available as and when needed.

Employees

As of September 27, 2021, bluebird bio has designated approximately 460 full-time employees to join 2seventy bio upon effectiveness of the separation, 91 of whom hold M.D. or Ph.D. degrees. Approximately 136 employees are expected to be in discovery research, 86 in our drug development organization, 12 in our strategy and corporate development organizations and 156 in general and administrative functions. None of our employees are expected to be subject to a collective bargaining agreement or represented by a trade or labor union. We consider our employee relations to be good.

Compensation and benefits programs

Our compensation programs are designed to align our employees' interests with the drivers of growth and stockholder returns by supporting our achievement of its primary business goals. Our goal is to attract and retain employees whose talents, expertise, leadership, and contributions are expected to sustain growth and drive long-term stockholder value. We are committed to providing comprehensive benefit options and it is our intention to offer benefits that will allow our employees and their families to live healthier and more secure lives. All employees are eligible for medical, dental, and vision insurance, paid and unpaid leaves, employee stock purchase plan, 401(k) plan, and group life and disability coverage.

Employee development and training

The development, recruitment and retention of our employees is a critical success factor for our company. To ensure we provide a meaningful experience for our employees, we intend to offer training and development programs to increase our organizational learning and support the promotion of our current employees.

Diversity

We are committed to taking action to help address racial injustice and inequality. Our senior leadership team and board of directors have committed to help improve representation and culture of inclusion in the future.

Legal Proceedings

We are not a party to any material legal proceedings at this time. From time to time, we may be subject to various legal proceedings and claims, which may have a material adverse effect on our financial position or results of operations.

MANAGEMENT

Directors and Executive Officers

The following table sets forth the names and ages, as of September 30, 2021, and titles of the individuals we currently expect to serve as our executive officers and members of our board of directors following the separation. Certain biographical information with respect to those executive officers and directors follows the table.

Name	Age	Position
Nick Leschly	49	President, Chief Executive Officer and Director
William D. Baird, III	50	Chief Financial Officer
Philip Gregory, D. Phil.	50	Chief Scientific Officer
Nicola Heffron	49	Chief Operating Officer
Daniel S. Lynch [(1)(2)(3)]	63	Director
Sarah Glickman [(1)(3)]	52	Director
Ramy Ibrahim, M.D. [(2)]	47	Director
Denice Torres [(1)(2)(3)]	62	Director
Marcela Maus, M.D., Ph.D. [(2)]	45	Director
William R. Sellers, M.D.	60	Director

(1) Member of the audit committee
(2) Member of the nominating and corporate governance committee
(3) Member of the compensation committee

Executive Officers

Nick Leschly is a member of our board of directors and will serve as our chief executive officer upon completion of this separation. Mr. Leschly has served as bluebird bio's chief executive officer, since September 2010. Prior to joining bluebird bio, Mr. Leschly served as a partner of Third Rock Ventures, L.P. since its founding in 2007, Mr. Leschly played an integral role in the overall formation, development and business strategy of several of Third Rock's portfolio companies, including Agios Pharmaceuticals, Inc. and Edimer Pharmaceuticals, Inc. Prior to joining Third Rock, he worked at Millennium Pharmaceuticals, Inc. (now a subsidiary of Takeda), leading several early-stage drug development programs and served as the product and alliance leader for VELCADE. Mr. Leschly also founded and served as chief executive officer of MedXtend Corporation. He received his B.S. in molecular biology from Princeton University and his M.B.A. from The Wharton School of the University of Pennsylvania. We believe that Mr. Leschly is qualified to serve on our board of directors because of his extensive knowledge and experience in management, finance and corporate governance with respect to the biotechnology and pharmaceutical industries.

William D. Baird, III will serve as our chief financial officer upon completion of this separation. Mr. Baird has served as bluebird bio's chief financial officer since February 2019, bluebird bio's Principal Financial Officer since March 2019 and bluebird bio's Principal Accounting Officer since February 2021. Mr. Baird served as chief financial officer of Amicus Therapeutics, Inc. from April 2012 until February 2019. From April 2005 until April 2012, Mr. Baird served as chief financial officer of PTC Therapeutics, Inc. ("PTC"). Before that, Mr. Baird held various positions of increasing responsibility with PTC from 2002 to 2005. Mr. Baird previously worked in the life science practice at L.E.K. Consulting, a strategy consulting firm, from 1999 to 2002, and at First Union National Bank as a corporate underwriter from 1994 to 1997. Since June 2018, Mr. Baird has served on the Board of Directors of Axcella Health, a biotechnology company. Mr. Baird received a B.S. from Georgetown University's Edmund A. Walsh School of Foreign Service, and an M.B.A. from The Wharton School of the University of Pennsylvania.

Nicola Heffron will serve as our chief operating officer upon completion of this separation. Ms. Heffron has served as bluebird bio's chief operating officer since January 2021. Prior to that, she served as bluebird bio's chief

commercial officer from October 2020 to January 2021 and as bluebird bio's senior vice president, Europe, from January 2020 to October 2020. Ms. Heffron has over twenty five years of experience in research and development, global commercial, and local operational and marketing strategy roles. Before joining bluebird bio, she served as head of global marketing for Celgene's myeloid portfolio and in several positions of increasing responsibility with Shire from May 2015 to September 2018. Prior to that, Ms. Heffron held a number of leadership roles in research and development and commercial at the global, regional, and affiliate level at GlaxoSmithKline and Eli Lilly. Ms. Heffron earned a bachelor's degree in pharmacy at University of Bradford and a M.B.A. from the University of Warwick.

Philip Gregory, D. Phil. will serve as our chief scientific officer upon completion of this separation. Dr. Gregory has served as bluebird bio's chief scientific officer since June 2015. Prior to joining bluebird bio, Dr. Gregory was formerly with Sangamo BioSciences, where he held multiple leadership positions over a nearly 15-year tenure, most recently serving as chief scientific officer and senior vice president, Research. In this role, he was responsible for the scientific direction and strategic research planning for the company. Dr. Gregory played an integral role in Sangamo's partnerships and drove early discovery and development for several product candidates in multiple therapeutic areas. Prior to joining Sangamo, he was a postdoctoral fellow at Ludwig-Maximilians-Universität in Munich, Germany. Dr. Gregory holds a D. Phil in biochemistry from Oxford University, Keble College and a B.Sc. in microbiology from Sheffield University.

Non-Management Directors

Sarah Glickman currently serves as a member of the bluebird bio board of directors and, upon effectiveness of the registration statement of which this information statement forms a part, will be a member of our board of directors and the chair of the audit committee of the board. Upon completion of the separation, she will step down from the bluebird bio board. Since September 2020, Ms. Glickman has served as Chief Financial Officer of Criteo S.A., a global technology company headquartered in Paris, France. Prior to joining Criteo, she served as Acting Chief Financial Officer at XPO Logistics, a leading global provider of transportation and logistics solutions, where she previously served as Senior Vice President, Corporate Finance and Transformation. Before that, she held operational Chief Financial Officer roles at Novartis and Honeywell International and served in various executive roles in shared services and operations, internal audit, transformation and controllership at both Honeywell International and Bristol-Myers Squibb. She started her career at PricewaterhouseCoopers. Ms. Glickman is a U.S. CPA and a U.K. Fellow Chartered Accountant with a degree in economics from the University of York in England. We believe that Ms. Glickman is qualified to serve on our board of directors because of her corporate leadership experience and broad financial expertise.

Ramy Ibrahim, M.D. currently serves as a member of the bluebird bio board of directors and, upon effectiveness of the registration statement of which this information statement forms a part, will join our board of directors. Upon completion of the separation, he will step down from the bluebird bio board. Dr. Ibrahim is a medical oncologist who has served as the Chief Medical Officer of BitBio since October 2020 and as the Chief Medical Officer of CMO Milkyway Advisors since January 2021. Dr. Ibrahim also serves as a board member for Surface Oncology, a scientific advisory board member for Harpoon Therapeutics, and as a clinical advisor at the Parker Institute for Cancer Immunotherapy. He formerly served as chief medical officer at the Parker Institute for Cancer Immunotherapy from 2016 to 2021. Prior to the Parker Institute, Dr. Ibrahim served as the vice president of clinical development for immuno-oncology AstraZeneca from 2011 to 2016. In this role, he led the development of the early checkpoint inhibitor antibodies durvalumab and tremelimumab. From 2005 to 2011, at Bristol-Myers Squibb, Dr. Ibrahim played a key role in the clinical development of ipilimumab, the first FDA-approved immune checkpoint inhibitor, from early phase II through multiple global launches. He also played a key role in the early development of nivolumab, as well as the development of anti-PD-L1 and anti-CD137 antibody programs. Dr. Ibrahim trained in medicine and medical oncology at Cairo University then conducted bench and clinical immunotherapy research at the cancer vaccine branch of the National Cancer Institute in Bethesda, Maryland, prior to moving into industry. We believe that Dr. Ibrahim is qualified to serve on our board of directors because of his significant industry knowledge and drug development experience, as well as his broad scientific and medical expertise.

Daniel S. Lynch currently serves as a member of the bluebird bio board of directors and, upon effectiveness of the registration statement of which this information statement forms a part, will join our board of directors. Upon completion of the separation, he will step down from the bluebird bio board. Mr. Lynch joined Third Rock Ventures, L.P. as an entrepreneur-in-residence in May 2011, and became a Venture Partner in May 2013, and now he is a Senior Advisor. Previously, Mr. Lynch served as Chief Executive and Chief Financial Officer of ImClone Systems Inc. As ImClone's Chief Executive Officer, he helped secure FDA approval of ERBITUX (Cetuximab), a novel cancer treatment. As its Chief Financial Officer, Mr. Lynch led negotiations to form the major partnership between ImClone and BMS. Earlier in his career, he served in various financial positions at BMS over a fifteen-year tenure. He served on the board of directors and the audit committee of U.S. Oncology, Inc. for five years until December 2010, when it was acquired by McKesson. Mr. Lynch received his B.A. in mathematics from Wesleyan University and his M.B.A. from the Darden Graduate School of Business Administration at the University of Virginia. We believe that Mr. Lynch is qualified to serve on our board of directors because of his extensive knowledge and experience with respect to the biotechnology and pharmaceutical industries and significant management, financial and corporate governance experience.

Marcela Maus, M.D., Ph.D., currently serves as a member of the bluebird bio board of directors and, upon effectiveness of the registration statement of which this information statement forms a part, will join our board of directors. Upon completion of the separation, she will step down from the bluebird bio board. Dr. Maus is currently an associate professor at Harvard Medical School, the Paula O'Keefe chair in oncology and director of cellular immunotherapy at the Massachusetts General Hospital (Mass General) Cancer Center, as well as an attending physician in the Hematopoietic Cell Transplant and Cell Therapy division of Oncology at Mass General. She is an associate member of the Broad Institute of Harvard and Massachusetts Institute of Technology (MIT), and an associate member of the Ragon Institute of Mass General, MIT, and Harvard. Dr. Maus' laboratory focuses on the biology of human T cell activation, costimulation, and memory, and on the application of human T cell therapies to human disease, including forward and reverse translation of engineered T cell therapies in early-phase clinical trials. She also serves on several scientific and clinical advisory boards for the biotechnology industry as well as external academic medical centers. Dr. Maus completed undergraduate studies at MIT and earned her M.D. and Ph.D. from the University of Pennsylvania. Dr. Maus trained in internal medicine at the University of Pennsylvania and in hematology and medical oncology at Memorial Sloan Kettering Cancer Center and is board-certified in these three disciplines. We believe that Dr. Mause is qualified to serve on our board of directors because of her extensive scientific and medical expertise, particularly in the field of medical oncology, and her significant industry knowledge.

William R. Sellers, M.D. currently serves as a member of the bluebird bio board of directors and, upon effectiveness of the registration statement of which this information statement forms a part, will join our board of directors. Upon completion of the separation, he will step down from the bluebird bio board. Since 2017, Dr. Sellers has served as a Core Institute Member at the Broad Institute and a Professor of Medicine at the Dana-Farber Institute and Harvard Medical School where he is responsible for running a research group focused on translating genomic discoveries into new therapeutics. In 2019, Dr. Sellers co-founded Civetta Therapeutics, where he serves as a member of the board of directors. Dr. Sellers also serves as a member of the scientific advisory board for several biopharmaceutical companies, including Ideaya Biosciences, and Epidarex Capital. Furthermore, he served as a member of the board of directors for Peloton Therapeutics from 2017 to 2019, as well as Servier Pharmaceuticals and Astex Pharmaceuticals in 2017. Dr. Sellers previously served as Vice President / Global Head of Oncology at Novartis Institutes for BioMedical Research from 2005 to 2016, where he led preclinical drug discovery and early clinical development. Appointed by President Barack Obama, he also served as a member of the National Cancer Advisory Board from 2011 to 2016. He previously was an Associate Professor of Medicine at the Dana-Farber Cancer Institute and Harvard Medical School and an Associate Member of the Broad Institute. Dr. Sellers received his B.S. in biology from Georgetown University in 1982 and M.D. from the University of Massachusetts Medical School in 1986. He completed his internship and residency in internal medicine at the University of California San Francisco in 1989 and trained in medical oncology at the Dana-Farber Cancer Institute. We believe that Dr. Sellers is qualified to serve on our board of directors because of his extensive research and drug discovery experience and broad scientific and medical knowledge.

Denice Torres currently serves as a member of the bluebird bio board of directors and, upon effectiveness of the registration statement of which this information statement forms a part, will join our board of directors. Upon completion of the separation, she will step down from the bluebird bio board. Ms. Torres is currently chief executive officer of The Ignited Company, a Pennsylvania-based consulting firm she founded in 2017. From 2005 to 2017, she served in various senior leadership roles at Johnson & Johnson (J&J). From 2015 to 2017, she was chief strategy and transformation officer for J&J's global medical device business and from 2011 to 2015, she was president of J&J McNeil Consumer Healthcare. From 2009 to 2011, she served as president of J&J Janssen Pharmaceuticals, Neuroscience, and from 2006-2009 she held various marketing positions at J&J. Before joining J&J, Ms. Torres spent fourteen years at Eli Lilly and Company, where she focused on marketing and business unit management. She is also the founder of The Mentoring Place, a nonprofit organization offering free executive mentoring to help women achieve their careers goals. Ms. Torres holds a B.S. in Psychology from Ball State University, a J.D. from Indiana University and an M.B.A. from the University of Michigan. She is a member of the Michigan Bar Association. We believe that Ms. Torres is qualified to serve on our board of directors because of her extensive executive and operational leadership experience, as well as her expertise in cultural transformation and leadership development in the healthcare and pharmaceutical industries.

Board Composition and Independence

Our business and affairs are managed under the direction of our board of directors. Upon effectiveness of the registration statement of which this information statement forms a part, our board of directors will consist of seven members. Our directors hold office until their successors have been elected and qualified or until their earlier death, resignation or removal. There are no family relationships among any of our directors or executive officers. It is anticipated that all of our directors, other than Mr. Leschly, will satisfy the independence standard established by the listing standards of Nasdaq Global Select Market as well as the corporate governance principles to be adopted by our board of directors.

Staggered Board

In accordance with the terms of our amended and restated certificate of incorporation and amended and restated bylaws that will be in effect at the closing of the separation, our board of directors will be divided into three staggered classes of directors and each will be assigned to one of the three classes. At each annual meeting of the stockholders, a class of directors will be elected for a three-year term to succeed the directors of the same class whose terms are then expiring. The terms of the directors will expire upon the election and qualification of successor directors at the annual meeting of stockholders to be held during the years 2022 for Class I directors, 2023 for Class II directors and 2024 for Class III directors. Upon completion of the separation, our Class I directors will be Mr. Leschly and Dr. Ibrahim, our Class II directors will be Mr. Lynch, Dr. Sellers, and Ms. Glickman and our Class III directors will be Ms. Torres and Dr. Maus. Our amended and restated certificate of incorporation and amended and restated bylaws will provide that the number of our directors shall be fixed from time to time by a resolution of the majority of our board of directors. The division of our board of directors into three classes with staggered three-year terms may delay or prevent stockholder efforts to effect a change of our management or a change in control.

Board Committees

Upon the completion of the separation, our board of directors will have three standing committees: an audit committee, a compensation committee and a nominating and corporate governance committee, each of which will operate pursuant to a charter to be adopted by our board of directors.

Audit Committee

Upon effectiveness of the registration statement of which this information statement forms a part, Ms. Glickman, Mr. Lynch and Ms. Torres will serve on our Audit Committee, which will be chaired by Ms. Glickman. The responsibilities of the Audit Committee are more fully described in our Audit Committee Charter and include, among other duties:

- reviewing and discussing with management and our independent registered public accounting firm our annual and quarterly financial statements, earnings releases and related disclosures;

- reviewing and discussing with management and our independent registered public accounting firm our internal controls and internal auditing procedures, including any material weaknesses in either;
- discussing our accounting policies and all material correcting adjustments with our management and our independent registered public accounting firm;
- discussing with our management and our independent registered public accounting firm any significant risks facing the company and the related mitigation plans, as well as monitoring our internal control over financial reporting and disclosure controls and procedures; appointing, overseeing, and approving the compensation for and, when necessary, terminating our independent registered public accounting firm;
- approving all audit services and all permitted non-audit, tax and other services to be performed by our independent registered public accounting firm, in each case, in accordance with the audit committee's pre-approval policy;
- discussing with the independent registered public accounting firm its independence and ensuring that it receives the written disclosures regarding these communications required by the Public Company Accounting Oversight Board;
- reviewing and approving all transactions or series of similar transactions to which we were or are a party in which the amount involved exceeded or exceeds $120,000 and in which any of our directors, executive officers, holders of more than 5% of any class of our voting securities, or any member of the immediate family of any of the foregoing persons, had or will have a direct or indirect material interest, other than compensation arrangements with directors and executive officers;
- recommending whether the audited financial statements should be included in our annual report and preparing the audit committee report required by SEC rules;
- reviewing all material communications between our management and our independent registered public accounting firm;
- reviewing, updating and recommending to our board approval of our code of business conduct and ethics; and establishing procedures for the receipt, retention, investigation and treatment of accounting related complaints and concerns.

Upon completion of the distribution, the Audit Committee will consist entirely of independent directors, and we intend that each will meet the independence requirements set forth in the listing standards of the Nasdaq Global Select Market and Rule 10A under the Exchange Act. Each member of the Audit Committee will be financially literate and have accounting or related financial management expertise as such terms are interpreted by our board of directors in its business judgment. Additionally, upon completion of the distribution, at least one member of the Audit Committee will be an "audit committee financial expert" under SEC rules and the Nasdaq Global Select Market listing standards applicable to audit committees.

Compensation Committee

Upon effectiveness of the registration statement of which this information statement forms a part, Mr. Lynch, Ms. Torres and Ms. Glickman will serve on our Compensation Committee, which will be chaired by Mr. Lynch. The responsibilities of the Compensation Committee are more fully described in our Compensation Committee Charter and are expected to include, among other duties:

- reviewing and approving corporate goals and objectives relevant to executive officer compensation and evaluating the performance of executive officers in light of those goals and objectives;
- reviewing and approving executive officer compensation, including salary, bonus and incentive compensation, deferred compensation, perquisites, equity compensation, benefits provided upon retirement, severance or other termination of employment, and any other forms of executive compensation;

- reviewing and approving our chief executive officer's compensation based on its evaluation of our chief executive officer's performance;
- overseeing and administering our incentive compensation plans and equity based plans and recommending the adoption of new incentive compensation plans and equity based plans to our board of directors;
- making recommendations to our board of directors with respect to director compensation; and
- making recommendations to our board of directors with respect to management succession planning, including planning with respect to our chief executive officer.

Upon completion of the distribution, the Compensation Committee will consist entirely of independent directors, and we intend that each will meet the independence requirements set forth in the listing standards of the Nasdaq Global Select Market. We also intend the members of the Compensation Committee will qualify as "non-employee directors" (within the meaning of Rule 16b-3 of the Exchange Act).

Nominating and Corporate Governance Committee

Upon effectiveness of the registration statement of which this information statement forms a part, Ms. Torres, Dr. Ibrahim, and Dr. Maus will serve on our Nominating and Corporate Governance Committee, which will be chaired by Ms. Torres. The responsibilities of the Nominating and Corporate Governance Committee will be more fully described in our Nominating and Corporate Governance Committee Charter and are expected to include, among other duties:

- identifying individuals qualified to become members of our board of directors;
- recommending to our board of directors the persons to be nominated for election as directors;
- assisting our board of directors in recruiting such nominees;
- recommending to our board of directors qualified individuals to serve as committee members;
- performing an annual evaluation of our board of directors;
- evaluating the need and, if necessary, creating a plan for the continuing education of our directors;
- assessing and reviewing our corporate governance guidelines and recommending any changes to our board of directors; and
- evaluating and approving any requests from our executives to serve on the board of directors of another for-profit company.

The Nominating & Corporate Governance Committee will consist entirely of independent directors, and we intend that each will meet the independence requirements set forth in the listing standards of the Nasdaq Global Select Market. The initial members of the Nominating & Corporate Governance Committee will be determined prior to the completion of the distribution.

Our board of directors may establish other committees from time to time.

Compensation Committee Interlocks and Insider Participation

During the fiscal year ended December 31, 2020, 2seventy bio did not exist and did not have a compensation committee or any other committee serving a similar function. Prior to the separation, decisions as to the compensation of those who are expected to serve as our executive officers were made by the bluebird bio Compensation Committee.

Code of Business Conduct and Ethics

In connection with the separation and the distribution, our board of directors is expected to adopt corporate governance principles that set forth the responsibilities of the board of directors and the qualifications and independence of its members and the members of its standing committees. In addition, in connection with the separation and distribution, our board of directors is expected to adopt, among other codes and policies, a code of conduct setting forth standards applicable to all of our companies and our directors, officers and employees. The corporate governance principles and code of conduct will be available on 2seventy bio's website at www.2seventybio.com. We expect that any amendment to the code, or any waivers of its requirements, will be disclosed on our website.

EXECUTIVE COMPENSATION

Executive Compensation

Overview

The following tables and discussion relate to the compensation paid to or earned by our executive officers who were serving as executive officers of bluebird bio as of December 31, 2020. Nick Leschly currently serves as chief executive officer of bluebird bio and will serve as our chief executive officer, William D. Baird currently serves as chief financial officer of bluebird bio and will serve as our chief financial officer, and Philip Gregory, D. Phil. currently serves as chief scientific officer of bluebird bio and will serve as our chief scientific officer. Mr. Leschly, Mr. Baird, and Dr. Gregory are referred to collectively in this information statement as our "named executive officers."

We are currently part of bluebird bio and not an independent company and our Compensation Committee has not yet been formed. The historical compensation shown below was determined by bluebird bio and the bluebird bio Compensation Committee. Prior to the completion of this separation, we will continue to be a part of bluebird bio, and therefore, compensation of our executives will continue to be determined based on the design and objectives of the bluebird bio executive compensation programs. Future compensation arrangements for our executive officers will be determined based on the compensation policies, programs and procedures to be established by the Compensation Committee that our board of directors will form in connection with this separation. Accordingly, the amounts and forms of compensation reported below are not necessarily indicative of the compensation that our named executive officers will receive following the separation, which could be higher or lower than the amounts shown below.

Summary Compensation Table

The following table sets forth the total compensation awarded to, earned by and paid to our named executive officers under bluebird bio's compensation and benefit plans and programs during the fiscal years ended December 31, 2020 and December 31, 2019:

Name and principal position	Year	Salary ($)	Bonus ($)	Option awards ($)	Stock Awards ($)(1)	Nonequity incentive plan compensation ($)	All other compensation ($)	Total ($)
Nick Leschly	2020	830,554 (2)	—	2,999,893	2,399,800	—	11,400 (3)	6,241,647
President, Chief Executive Officer	2019	660,000	—	8,698,341	3,365,750	418,275 (4)	11,200	13,153,566
William D. Baird, III	2020	474,600	—	923,044	738,400	121,800 (5)	122,206 (7)	2,380,050
Chief Financial Officer	2019	398,077 (6)	—	6,093,675	2,349,900	178,200 (6)	180,072	9,199,924
Philip Gregory, D. Phil.	2020	493,510 (2)	—	923,044	738,400	123,000 (5)	11,400 (3)	2,289,354
Chief Scientific Officer	2019	455,000	—	2,348,552	908,753	194,600 (4)	11,200	3,918,105

(1) The amounts reported in the "Option awards" and "Stock awards" columns above represent the aggregate grant date fair value of the bluebird bio stock options and restricted stock units granted to the named executive officers during 2019 and 2020 as computed in accordance with Financial Accounting Standards Board, or FASB, Accounting Standards Codification, or ASC, Topic 718, not including any estimates of forfeitures related to service-based vesting conditions. See note 14 of "Notes to Consolidated Financial Statements" in bluebird bio's Annual Report on Form 10-K filed with the SEC on February 23, 2021 for a discussion of assumptions made by bluebird bio in determining the aggregate grant date fair value of bluebird bio stock option and restricted stock unit awards. Note that the amounts reported in these columns reflect the accounting cost for these stock options and restricted stock units, and do not correspond to the actual economic value that may be received by the named executive officers from the stock options and restricted stock units.

(1) For participating named executive officers, salary amounts reported in 2020 reflect a voluntary salary reduction and include the grant date fair value of restricted stock unit awards granted in 2020 equal to 80% of the voluntary salary reduction amount.

(2) Amounts represent the employer matching contribution to the executive's 401(k) plan contributions.

(3) Amounts represent cash payment under bluebird bio's annual cash incentive program earned in 2019, and paid during 2020, based on achievement of performance goals.

(4) Amounts represent incentive payments under bluebird bio's annual incentive program earned in 2020, and paid during 2021, based on achievement of performance goals, 50% of which was paid in cash, and 50% of which was paid in fully vested bluebird bio common stock.

(5) Mr. Baird's employment with bluebird bio commenced on February 11, 2019. His annual base salary for 2019 was $450,000. The amounts reported in the "Salary" column and the "Non-equity incentive plan compensation" column for 2019 are prorated to reflect his start date.
(6) Amount represents the employer matching contributions to Mr. Baird's 401(k) plan contribution during the year as well as $50,581 of lodging and travel expenses and a related tax gross-up of $60,074 paid pursuant to the terms of his employment agreement with bluebird bio.

Overview

bluebird bio's Compensation Committee reviews compensation annually for executive officers and is primarily responsible for determining the compensation for the named executive officers. The bluebird bio Compensation Committee typically reviews and discusses the compensation of other executive officers with the chief executive officer. bluebird bio's Compensation Committee has the authority to engage the services of a consulting firm or other outside advisor to assist it in designing our executive compensation programs and in making compensation decisions. For 2020, the bluebird bio Compensation Committee engaged Radford, which is part of the Rewards Solutions practice at Aon plc, as its independent compensation consultant to advise on executive and board of directors compensation matters including: overall compensation program design, peer group development and updates, and collection of market data to inform our compensation programs for our executives and members of our board of directors. bluebird bio develops its compensation programs after reviewing publicly available compensation data and it also subscribes to Radford's various global annual and specialized life sciences and general industry surveys on an ongoing basis. Radford advised the bluebird bio Compensation Committee on all of the principal aspects of executive compensation, including executive new hire compensation arrangements. Radford consultants attend meetings of the bluebird bio Compensation Committee when requested to do so. Radford reports directly to the bluebird bio Compensation Committee and not to management, although it meets with management for purposes of gathering information for its analyses and recommendations. The bluebird bio Compensation Committee has assessed the independence of Radford consistent with SEC regulations and Nasdaq listing standards and has concluded that the engagement of Radford does not raise any conflict of interest.

Base Salaries

bluebird bio provides base salaries to its executive officers to compensate them with a fair and competitive base level of compensation for services rendered during the year. bluebird bio's Compensation Committee typically determines the base salary for each executive based on the executive's responsibilities, experience and, if applicable, the base salary level of the executive prior to joining bluebird bio. In addition, bluebird bio's Compensation Committee reviews and considers the level of base salary paid by companies in bluebird bio's peer group for similar positions.

At the beginning of 2020, bluebird bio's Compensation Committee reviewed the compensation for each of the named executive officers and approved merit increases in base salary for each of the named executive officers. With respect to Mr. Leschly, the determination to increase his base salary was based on his critical role, bluebird bio's performance throughout 2019 and the critical upcoming execution and risk inflection points throughout 2020 and into 2021, as well as a consideration of market conditions and a comparison of his base salary to the base salary of chief executive officers in bluebird bio's 2020 peer group. The base salary increases for the other named executive officers were based on bluebird bio's performance against its 2019 goals, as well as each such named executive officer's achievement of individual goals in 2019. The table below sets forth the 2020 base salaries for each of the named executive officers:

Name	2020 Base Salary ($)
Nick Leschly	725,000
William D. Baird, III	474,600
Philip Gregory, D. Phil.	479,500

However, 2020 was an extraordinary year globally due to the COVID-19 pandemic, and bluebird bio's operations and ability to execute on its strategy were impacted as a result. As part of bluebird bio's comprehensive business review in the second quarter of 2020, and with the goal of ensuring bluebird bio's ability to execute on its strategy in light of the COVID-19 pandemic, certain senior executives of bluebird bio voluntarily elected to reduce

their base salaries for a 12-month period beginning May 2020. Mr. Leschly reduced his base salary by approximately 100% during this 12-month period, and each other participating senior executive reduced his or her base salary by 20%. Each participant received a grant of restricted stock units equal to 80% of the amount of his or her salary reduction, determined using $50.77, the closing market price on the Nasdaq Global Select Market of bluebird bio's common stock on May 1, 2020, rounded down to the nearest whole share. The named executive officers participating in this program, their original 2020 base salaries, their base salaries as reduced through participation in this program, and the number of restricted stock units granted are set forth in the table below.

Name	2020 Base Salary ($)	Reduction of Base Salary ($)	Reduced 2020 Base Salary (effective May 2020) ($)	Number of Restricted Stock Units (#)
Nick Leschly	$ 725,000	$ 722,513	$ 2,487	11,384
Philip Gregory, D. Phil.	$ 479,500	$ 95,900	$ 383,600	1,511

At the beginning of 2021, the bluebird bio Compensation Committee reviewed the base salaries of the named executive officers and approved a 3.5% increase in each of named executive officer's base salary in recognition of bluebird bio's performance in 2020 amid the challenging context of the COVID-19 pandemic, and the need to provide a competitive base level of salary balanced against financial discipline. The 2021 base salaries for the named executive officers are set forth in the table below.

Name	2021 Base Salary ($)
Nick Leschly	$ 750,500
William D. Baird, III	$ 491,300
Philip Gregory, D. Phil.	$ 496,300

Bonuses

At the beginning of 2020, bluebird bio's Compensation Committee approved bluebird bio's annual incentive program for 2020. At the time of such approval, consistent with past practice, the 2020 annual incentive program consisted of the opportunity for eligible participants to earn cash incentive awards calculated as a percentage of pre-established bonus targets. Under bluebird bio's annual incentive plan, the chief executive officer's incentive award is based entirely on bluebird bio's performance relative to pre-established company goals, and the incentive award for each of the other named executive officers is based 80% on bluebird bio's performance relative to the pre-established company goals, and 20% on individual performance. bluebird bio's Compensation Committee however, reserves the discretion to adjust upward or downward any cash incentive award as it deems appropriate, provided that neither company performance nor individual performance may exceed 150% and, accordingly, bonuses are capped at 150% of target amounts.

After careful consideration, bluebird bio's Compensation Committee determined not to adjust the pre-established 2020 company goals. Given the exceptional circumstances of 2020 however, and the impacts of the COVID-19 pandemic across bluebird bio's industry and bluebird bio's business, bluebird bio's Compensation Committee reviewed its 2020 annual incentive plan in the second quarter of 2020 and determined that incentive awards for the named executive officers would be paid in an equal mix of cash and fully-vested stock rather than entirely in cash.

In the fourth quarter of 2020, bluebird bio's Compensation Committee assessed company performance relative to the pre-established 2020 company goals, taking into account the impact the COVID-19 pandemic had on bluebird bio's business, operations, and industry, including: the transition to a work-from-home policy applicable to the majority of bluebird bio's people, increased restrictions on the number of people and activities in research and development laboratories and manufacturing facilities, disruption of clinical trial enrollment and other development activities, impacts to available healthcare resources within health systems to provide services and support activities unrelated to pandemic response, decreased patient demand in the commercial context, interruptions in activities in

bluebird bio's supply chain due to staffing shortages at our third-party manufacturing sites, and effects on bluebird bio's ongoing interactions with health regulatory agencies and pricing and reimbursement agencies due to shifting priorities. Ultimately, the Compensation Committee determined that overall, bluebird bio achieved an 85% performance level against the pre-established 2020 company goals, taking into consideration these external factors due to the COVID-19 pandemic and unplanned accomplishments. However, the Compensation Committee also recognized that bluebird bio as a whole missed critical goals based on a failure to execute leading to meaningful impacts on its business, and that the efforts of bluebird bio at large did not translate into demonstrable results. As a consequence and consistent with its pay for performance philosophy, the bluebird bio Compensation Committee held senior executives accountable and used its discretion to adjust downward the company performance level applicable to the chief executive officer to 0%, and the company performance level applicable to the other named executive officers to 50%. In addition, bluebird bio's Compensation Committee assessed individual performance of the named executive officers other than the chief executive officer and determined that the individual performance of each such named executive officer was achieved at 85% of target level.

The table below shows each named executive officer's target incentive award under the bluebird bio 2020 annual incentive program as a percentage of the named executive officer's annual base salary in 2020, the target incentive award opportunity in dollars for 2020 and the actual incentive awards to our named executive officers for 2020 performance, which were paid in February 2021, as well as the actual 2020 incentive award payment as a percentage of the 2020 target incentive award opportunity.

Name	2020 Target Incentive Award (% of 2020 Base Salary)	2020 Target Incentive Award Opportunity ($)	Actual Total 2020 Incentive Award Amount ($) (1)	Cash Portion of 2020 Incentive Award Amount ($)	Equity Portion of 2020 Incentive Award Amount (# of shares) (2)	2020 Actual Incentive Award Amount (% of 2020 Target Incentive Award Opportunity)
Nick Leschly	65 %	471,250	—	—	—	— %
William D. Baird, III	45 %	213,570	121,800	60,900	2,141	57 %
Philip Gregory, D. Phil.	45 %	215,775	123,000	61,500	2,162	57 %

(1) Represents the total 2020 incentive award amount, which was paid 50% in cash, and 50% in the form of a grant of fully-vested bluebird bio stock.
(2) Represents the number of shares of bluebird bio stock granted, determined by dividing 50% of the total 2020 incentive award amount by $28.44, the closing price of bluebird bio's common stock on the date of the grant.

In the first quarter of 2021, the bluebird bio Compensation Committee approved the bluebird bio annual incentive program for 2021. The terms of the 2021 annual incentive program are substantially the same as the 2020 annual incentive program. In light of the separation, bluebird bio's Compensation Committee determined that 2021 performance for bluebird bio and 2seventy bio will be pro-rated for each business, to be defined by timing for completion of the separation. The annual incentive award target for each named executive officer for 2021 is set forth below.

Name	2021 Base Salary ($)	2021 Target Award (% of Base Salary)	2021 Target Award ($)
Nick Leschly	750,500	65 %	487,825
William D. Baird, III	491,300	45 %	221,085
Philip Gregory, D. Phil.	496,300	45 %	223,335

Equity-Based Compensation

bluebird bio's long-term incentive equity awards have generally been in the form of stock options and restricted stock units. The size of equity awards has varied among executive officers based on their positions and annual

performance assessments. All stock options granted by bluebird bio have exercise prices equal to the fair market value of bluebird bio's common stock on the date of grant, so that the recipient will not realize any value from the option unless bluebird bio's share price increases above the stock price on the date of grant. Typically, annual stock options granted executive officers have a ten-year term and vest as to 25% of the shares on the first anniversary of the grant date and then the remaining shares vest in equal monthly installments thereafter until the fourth anniversary of such date. Annual restricted stock units granted to our executives generally vest in equal annual installments beginning on or about the first anniversary of the first business day of the year of grant, until the fourth anniversary of such date.

As part of the ongoing review of bluebird bio's compensation strategy and practices, bluebird bio's Compensation Committee determines the appropriate mix of the type of equity awards, based in part on recommendations from Radford, its independent compensation consultant. Because of the volatility of bluebird bio's stock price in relation to when equity grants are made, bluebird bio's equity compensation guidelines set forth aggregate grant targets reflecting stock options plus restricted stock units based on number of shares (rather than value of the equity grants), and these guidelines are developed based on and in reference to our equity grant data for our peer companies. In 2020, the target mix for long-term incentive equity grants to the named executive officers was generally split approximately one-half in stock options and one-half in restricted stock units based on value. The bluebird bio Compensation Committee believes that this deliberate mix of equity ensures that wealth creation remains tied to stock performance and promotes retention.

In connection with bluebird bio's annual review of named executive officers' performance during 2019 and consistent with bluebird bio's compensation philosophy, in January 2020, bluebird bio's Compensation Committee approved the annual long-term equity incentive awards to the named executive officers as set forth in the table below:

	2020 Option Award		2020 RSU Award	
Name	**Shares (#)**	**Grant date fair value ($)**	**Shares (#)**	**Grant date fair value ($)**
Nick Leschly	65,000	2,999,893	32,500	2,399,800
William D. Baird, III	20,000	923,044	10,000	738,400
Philip Gregory, D.Phil.	20,000	923,044	10,000	738,400

The equity awards granted to the named executive officers during 2020, and the grant date fair values of those awards determined in accordance with FASB ASC Topic 718, are shown in the Summary Compensation Table above.

In connection with the annual review of the named executive officers' performance during 2020 and consistent with bluebird bio's compensation philosophy, in January 2021, bluebird bio's Compensation Committee approved the annual long-term equity incentive awards to the named executive officers as set forth in the table below:

	2021 Option Award		2021 RSU Award Time-Based Vesting		2021 RSU Award Performance-Based Vesting (based on relative total stockholder return)	
Name	**Shares (#)**	**Grant date fair value ($)**	**Shares (#)**	**Grant date fair value ($)**	**Target Shares (#)**	**Grant date fair value ($)**
Nick Leschly	90,000	1,494,095	18,000	511,920	27,000	1,708,560
William D. Baird, III	25,000	415,026	12,500	355,500	—	—
Philip Gregory, D.Phil.	25,000	415,026	12,500	355,500	—	—

In 2021, bluebird bio introduced a new type of performance-based restricted stock unit award to further align the chief executive officer's compensation with stockholder experience, and in response to investor feedback. This performance-based award is earned based on total stockholder return over the three-year period of 2021 through

2023 compared to a peer group of companies in the Standard & Poor Biotechnology Select Industry Index having a market value of between $750 million and $4.5 billion, which reflects a weighted average of bluebird bio and the projected size of 2seventy bio following the separation. The multiplier used to determine the number of earned restricted stock units could range between 50% and 200%, with a threshold achievement level at -25th percentile (as compared to the peer median) required to earn any restricted stock units, and a ceiling achievement level at the +50th percentile (as compared to the peer median). The total stockholder return performance-based restricted stock units, to the extent earned, vest in full on the third anniversary of the grant date, subject to Mr. Leschly's continued service. For 2021, this award made up approximately 20% of the chief executive officer's total target equity compensation.

Employee Benefits

Other compensation to the named executive officers at bluebird bio consists primarily of the broad-based benefits bluebird bio provides to all full-time employees in the United States, including medical, dental and vision insurance, group life and disability insurance, an employee stock purchase plan and a 401(k) plan. Pursuant to bluebird bio's employee stock purchase plan, bluebird bio employees, including the named executive officers, have an opportunity to purchase bluebird bio common stock at a discount on a tax-qualified basis through payroll deductions. The employee stock purchase plan is designed to qualify as an "employee stock purchase plan" under Section 423 of the Code. The purpose of the employee stock purchase plan is to encourage employees, including the named executive officers, to become bluebird bio stockholders and better align their interests with those of our other stockholders. Pursuant to bluebird bio's 401(k) plan, bluebird bio employees, including the named executive officers, may elect to defer a portion of their current compensation up to the statutorily prescribed annual limit (which was $19,500 in 2020), with additional salary deferrals not to exceed $26,000 available to those employees 50 years of age or older, and to have the amount of this deferral contributed to bluebird bio's 401(k) plan. bluebird bio makes discretionary matching contributions and other employer contributions on behalf of eligible employees under its 401(k) plan. For fiscal year 2020, bluebird bio matched a portion of eligible employee contributions equal to 100% of the first 4% of eligible contributions pursuant to the 401(k) plan's matching formula.

Currently, bluebird bio does not view perquisites or other personal benefits as a significant component of its executive compensation program. Accordingly, bluebird bio does not provide perquisites to the named executive officers, except in situations where bluebird bio believes it is appropriate to assist an individual in the performance of his or her duties, to make him or her more efficient and effective, and for recruitment and retention purposes.

Existing Employment Agreements Between our Named Executive Officers and bluebird bio

Below are descriptions of the existing employment agreements between our named executive officers and bluebird bio.

Nick Leschly. bluebird bio has entered into an amended and restated employment agreement, effective as of the closing of bluebird bio's initial public offering on June 24, 2013, with Mr. Leschly for the position of president and chief executive officer. Mr. Leschly currently receives an annual base salary from bluebird bio of $750,500, which is subject to adjustment at the discretion of the bluebird bio Compensation Committee. Mr. Leschly is also eligible for an annual cash incentive award targeted at 65% of his annual base salary. Mr. Leschly is currently eligible to participate in bluebird bio's employee benefit plans, subject to the terms of those plans.

William D. Baird, III. bluebird bio has entered into an employment agreement, effective as of December 18, 2018, with Mr. Baird for the position of chief financial officer. Mr. Baird currently receives an annual base salary of $491,300, which is subject to adjustment at the discretion of the bluebird bio Compensation Committee. Mr. Baird is also eligible for an annual cash incentive award targeted at 45% of his annual base salary, payable at the discretion of the bluebird bio Compensation Committee. Mr. Baird is currently eligible to participate in bluebird bio's employee benefit plans, subject to the terms of those plans. In addition, pursuant to the terms of the employment agreement, prior to Mr. Baird's permanent relocation to the Cambridge, Massachusetts area for up to a period of three years, bluebird bio has agreed to reimburse Mr. Baird for the cost of temporary living arrangements reasonably acceptable to bluebird bio, grossed up for Mr. Baird's anticipated income tax liability.

Philip Gregory, D. Phil. bluebird bio has entered into an employment agreement with Dr. Gregory, effective as of May 30, 2015, and amended on November 3, 2016. Dr. Gregory currently serves as bluebird bio's chief scientific officer and receives an annual base salary of $496,800, which is subject to adjustment at the discretion of the bluebird bio Compensation Committee. Dr. Gregory is also eligible for an annual cash incentive award targeted at 45% of his annual base salary, payable at the discretion of the Compensation Committee. Dr. Gregory is currently eligible to participate in bluebird bio's employee benefit plans, subject to the terms of those plans.

These employment agreements also contain provisions that provide for certain payments and benefits in the event of an involuntary termination of employment. In addition, the named executive officers may be entitled to accelerated vesting of their outstanding and unvested awards in certain circumstances. The information below describes certain compensation that may become due as a result of certain events. Outstanding bluebird bio equity awards held by the named executive officers as of December 31, 2020 are set forth under "Outstanding Equity Awards at Fiscal Year-End" below.

Involuntary Termination of Employment

Pursuant to their employment agreements, each named executive officer is eligible to receive certain payments and benefits in the event his employment is terminated by bluebird bio without "cause" (as defined in the employment agreements) or in the event he terminates his employment with "good reason" (as defined in the employment agreements). Upon the timely execution of a severance agreement, including a general release of claims, each named executive officer is eligible to receive the following payments and benefits:

- 12 months of base salary continuation; and
- if he elects to continue his group healthcare benefits, to the extent authorized by and consistent with COBRA, bluebird bio will pay the named executive officer a monthly cash payment equal to the monthly employer contribution bluebird bio would have made to provide him health insurance if he had remained employed by bluebird bio until the earlier of (1) 12 months following the date of termination, or (2) the end of the named executive officer's COBRA health continuation period.

Sale Event

In addition, in the event that any of the named executive officers terminates his employment with bluebird bio for good reason or his employment with bluebird bio is terminated by bluebird bio without cause, in either case within 12 months following a "sale event" (as defined in the bluebird bio 2013 Stock Option and Incentive Plan, or the 2013 Plan), he will be entitled to receive the following payments and benefits (in lieu of the payments and benefits described above) upon the timely execution of a severance agreement, including a general release of claims:

- a lump sum cash payment equal to one times (or one and a half times in the case of Mr. Leschly) the sum of (1) the named executive officer's then-current base salary (or base salary in effect immediately prior to the sale event, if higher) and (2) the named executive officer's target annual cash incentive compensation; and
- if he elects to continue his group healthcare benefits, to the extent authorized by and consistent with COBRA, bluebird bio will pay the named executive officer a monthly cash payment equal to the monthly employer contribution bluebird bio would have made to provide him health insurance if he had remained employed by bluebird bio until the earlier of (1) 12 months (or 18 months in the case of Mr. Leschly) following the date of termination or (2) the end of the named executive officer's COBRA health continuation period; and
- all stock options and other stock-based awards granted to the named executive officer after the date of his employment agreement will become fully exercisable and non-forfeitable as of the date of the named executive officer's termination.

Outstanding Equity Awards at Fiscal Year-End

The following table sets forth information regarding bluebird bio equity awards held by our named executive officers as of December 31, 2020.

	Option Awards [1]				Stock Awards [1]	
Name	Number of Securities Underlying Unexercised Options ((#) Exercisable)	Number of Securities Underlying Unexercised Options (#) Unexercisable	Option Exercise Price ($)/share	Option Expiration Date	Number of Shares or Units of Stock That Have Not Vested (#)	Market Value of Shares or Units of Stock That Have Not Vested ($)
Nick Leschly	15,999	—	5.50	1/16/2023	—	
	33,649	—	5.50	1/16/2023	—	
	73,006	—	5.50	1/16/2023	—	
	70,504	—	5.50	1/16/2023	—	
	10,197	—	5.50	1/16/2023	—	
	165,000	—	24.47	3/3/2024	—	
	165,000	—	97.40	3/2/2025	—	
	90,000	—	50.51	3/1/2026	—	
	107,685	2,315 [2]	75.60	2/1/2027	—	
	87,500	32,500 [3]	205.25	2/1/2028	—	
	47,913	52,087 [4]	134.63	2/1/2029	—	
	—	65,000 [5]	73.84	3/2/2030	—	
	—	—	—	—	6,875 [6]	297,481
	—	—	—	—	15,000 [7]	649,050
	—	—	—	—	19 [8]	811
	—	—	—	—	32,500 [9]	1,406,275
	—	—	—	—	4,743 [12]	205,230
William D. Baird, III	27,500	32,500 [10]	156.66	3/1/2029	—	—
	—	20,000 [5]	73.84	3/2/2030	—	—
	—	—	—	—	11,250 [11]	486,788
	—	—	—	—	10,000 [9]	432,700
Philip Gregory	50,000	—	163.07	7/1/2025	—	—
	6,200	—	50.51	3/1/2026	—	—
	24,275	725 [2]	75.60	2/1/2027	—	—
	24,784	9,216 [3]	205.25	2/1/2028	—	—
	12,932	14,068 [4]	134.63	2/1/2029	—	—
	—	20,000 [5]	73.84	3/2/2030	—	—
	—	—	—	—	2,125 [6]	91,949
	—	—	—	—	4,250 [7]	183,898
	—	—	—	—	5,063 [8]	219,076
	—	—	—	—	10,000 [9]	432,700
	—	—	—	—	630 [12]	27,260

(1) All unvested stock options and restricted stock unit awards were granted under bluebird bio's 2013 Plan. The market value of the restricted stock unit award is based on the closing price of $43.27 per share for bluebird bio's common stock on December 31, 2020, as reported on the Nasdaq Global Select Market.
(2) Represents options to purchase shares of bluebird bio's common stock granted on February 1, 2017. The shares underlying these options vest as follows: 25% vested on January 4, 2018, with the remainder of the shares vesting in equal monthly installments over the following three years through January 4, 2021, subject to continued service through each applicable vesting date.
(3) Represents options to purchase shares of bluebird bio's common stock granted on February 1, 2018. The shares underlying these options vest as follows: 25% vested on January 4, 2019, with the remainder of the shares vesting in equal monthly installments over the following three years through January 4, 2022, subject to continued service through each applicable vesting date.
(4) Represents options to purchase shares of bluebird bio's common stock granted on February 1, 2019. The shares underlying these options vest as follows: 25% vested on January 4, 2020, with the remainder of the shares vesting in equal monthly installments over the following three years through January 4, 2023, subject to continued service through each applicable vesting date.
(5) Represents options to purchase shares of bluebird bio's common stock granted on March 2, 2020. The shares underlying these options vest as follows: 25% vested on January 4, 2021, with the remainder of the shares vesting in equal monthly installments over the following three years through January 4, 2024, subject to continued service through each applicable vesting date.
(6) Restricted stock unit award vests in four equal annual installments through January 4, 2021.
(7) Restricted stock unit award vests in four equal annual installments through January 4, 2022, subject to continued service through each applicable vesting date.
(8) Restricted stock unit award vests in four equal annual installments through January 4, 2023, subject to continued service through each applicable vesting date.
(9) Restricted stock unit award vests in four equal annual installments through January 4, 2024, subject to continued service through each applicable vesting date.
(10) Represents an option to purchase shares of bluebird bio's common stock granted on March 1, 2019. The shares underlying this options vest as follows: 25% vested on February 11, 2020, with the remainder of the shares vesting in equal monthly installments over the following three years through February 11, 2023, subject to continued service through each applicable vesting date.
(11) Restricted stock unit award vests in four equal annual installments through February 11, 2023, subject to continued service through each applicable vesting date.
(12) Restricted stock unit award vests in 12 equal monthly installments through May 1, 2021.

Director Compensation

Mr. Leschly is not compensated for his service as a member of the bluebird board of directors and similarly will not receive compensation for his service to us as a director. Mr. Leschly's compensation for his service as bluebird's chief executive officer in the year ended December 31, 2020 is described above in the section of this information statement entitled "Executive Compensation" above. The following table sets forth information concerning the compensation paid to, or awarded to, our directors, other than Dr. Leschly, under bluebird's director compensation plan during fiscal year 2020:

Name[1]	Fees earned or paid in cash ($)[2]	Option awards ($)[3]	Stock awards ($)[3]	Total ($)
Daniel S. Lynch	110,199	159,823	134,589	404,611
William R. Sellers, M.D.	47,678	114,159	96,135	257,972
Denice Torres [4]	13,125	180,330	147,983	341,438

(1) The aggregate number of shares of bluebird bio common stock underlying stock options outstanding as of December 31, 2020 for the non-employee directors were: Mr. Lynch: 70,942, Dr. Sellers: 11,000, and Ms. Torres: 4,500. The aggregate number of bluebird restricted stock units outstanding as of December 31, 2020 for the non-employee directors was: Mr. Lynch: 2,359, Dr. Sellers: 2,946, and Ms. Torres: 2,250.
(2) The amounts reported reflect voluntary reduction of cash retainer for Mr. Lynch and Dr. Sellers and include the grant date fair value of bluebird bio restricted stock unit awards granted in 2020 equal to 80% of the voluntary cash retainer reduction amount for each such director.
(3) The amounts reported in the "Option awards" and "Stock awards" columns above represent the aggregate grant date fair value of the bluebird bio stock options and restricted stock units granted directors during 2020 as computed in accordance with FASB ASC Topic 718, not including any estimates of forfeitures. See note 14 of "Notes to Consolidated Financial Statements" in bluebird bio's Annual Report on Form 10-K filed with the SEC on February 23, 2021 for a discussion of assumptions made by bluebird bio in determining the aggregate grant date fair value of bluebird bio stock option and restricted stock unit awards. Note that the amounts reported in these columns reflect the accounting cost for these stock options and restricted stock units, and do not correspond to the actual economic value that may be received by the non-employee directors from the stock options and restricted stock units.
(4) Ms. Torres was appointed to bluebird bio's board of directors effective August 10, 2020. The amounts reported for the option awards and restricted stock units granted to Ms. Torres represent the new director equity grant pursuant to bluebird bio's Non-Executive Director Compensation Policy.

Following the distribution, we expect to adopt a non-employee director compensation program, based on market and peer data, setting forth the compensation that members of our board of directors will be eligible to receive going forward in respect of their service to us.

New Employment Agreements Between our Named Executive Officers and 2seventy bio

In connection with the separation and distribution, we intend to enter into new employment agreements with our named executive officers, as described below.

Nick Leschly. We will enter into an employment agreement, effective as of the closing of the separation and distribution, with Mr. Leschly for the position of president and chief executive officer. Mr. Leschly will receive an annual base salary of $750,500, which will be subject to adjustment at the discretion of the Compensation Committee. Mr. Leschly will be eligible for an annual cash incentive award targeted at 65% of his annual base salary. Mr. Leschly will be eligible to participate in the 2seventy bio employee benefit plans, subject to the terms of those plans.

William D. Baird, III. We will enter into an employment agreement, effective as of the closing of the separation and distribution, with Mr. Baird for the position of chief financial officer. Mr. Baird will receive an annual base salary of $491,300, which will be subject to adjustment at the discretion of the Compensation Committee. Mr. Baird will be eligible for an annual cash incentive award targeted at 45% of his annual base salary, payable at the discretion of the Compensation Committee. Mr. Baird will be eligible to participate in the 2seventy bio employee benefit plans, subject to the terms of those plans.

Philip Gregory, D. Phil. We will enter into an employment agreement, effective as of the closing of the separation and distribution, with Dr. Gregory for the position of chief scientific officer. Dr. Gregory will receive an annual base salary of $496,300, which will be subject to adjustment at the discretion of the Compensation Committee. Dr. Gregory will be eligible for an annual cash incentive award targeted at 45% of his annual base salary, payable at the discretion of the Compensation Committee. Dr. Gregory will be eligible to participate in the 2seventy bio employee benefit plans, subject to the terms of those plans.

Involuntary termination of employment by Company without Cause or by Executive for Good Reason

Pursuant to their employment agreements, each named executive officer will be eligible to receive certain payments and benefits in the event their employment is terminated by us without “cause” (as defined in the employment agreements) or in the event the named executive officer terminates the officer’s employment with “good reason” (as defined in the employment agreements). Upon the timely execution of a separation agreement, including a general release of claims, each named executive officer is eligible to receive the following payments and benefits:

- 12 months of base salary continuation (which amount shall be reduced by any “garden leave” amounts the named executive officer receives in any calendar year pursuant to the Restrictive Covenants Agreement (as defined in the employment agreements)); and
- if the named executive officer elects to continue their group healthcare benefits, to the extent authorized by and consistent with COBRA, we will pay the named executive officer a monthly cash payment equal to the monthly employer contribution we would have made to provide him health insurance if he had remained employed by us until the earlier of (1) 12 months following the date of termination, or (2) the end of the named executive officer’s COBRA health continuation period.

Sale event

In addition, in the event that any of our named executive officers terminates their employment with us for ""good reason” (as defined in the employment agreements) or their employment with us is terminated by us without “cause” (as defined in the employment agreements) in either case within 12 months following a “sale event” (as defined in the 2021 Plan), they will be entitled to receive the following payments and benefits (in lieu of the

payments and benefits described above) upon the timely execution of a separation agreement, including a general release of claims:

- a lump sum cash payment equal to one times (or one and a half times in the case of Mr. Leschly) the sum of (1) the named executive officer's then-current base salary (or base salary in effect immediately prior to the sale event, if higher) and (2) the named executive officer's target annual cash incentive compensation (or the target bonus in effect immediately prior to the sale event, if higher); provided, that these amounts shall be reduced by any "garden leave" amounts the named executive officer receives in any calendar year pursuant to the Restrictive Covenants Agreement; and
- if he elects to continue his group healthcare benefits, to the extent authorized by and consistent with COBRA, 2seventy bio will pay the named executive officer a monthly cash payment equal to the monthly employer contribution 2seventy bio would have made to provide him health insurance if he had remained employed by 2seventy bio until the earlier of (1) 12 months (or 18 months in the case of Mr. Leschly) following the date of termination or (2) the end of the named executive officer's COBRA health continuation period; and
- all stock options and other stock-based awards granted to the named executive officer after the date of his employment agreement with 2seventy bio that are subject to time-based vesting will become fully exercisable or non-forfeitable as of the later of (i) the Date of Termination (as defined in the employment agreements) and (ii) the effective date of the Separation Agreement and Release ((as defined in the employment agreements).

2021 Compensation Plans

The following summaries describe the material terms of the 2seventy bio, Inc. 2021 Stock Option and Incentive Plan, or the 2021 Plan, the 2seventy bio, Inc. 2021 Employee Stock Purchase Plan, or the ESPP, and the Senior Executive Cash Bonus Plan, or the Bonus Plan. These summaries are not complete descriptions of all of the terms of the 2021 Plan, the ESPP, and the Bonus Plan and are qualified in their entirety by reference to the 2021 Plan, the ESPP, and the Bonus Plan, which have been filed as exhibits to the registration statement of which this information statement is a part.

2021 Stock Option and Incentive Plan

Our 2021 Plan was adopted by our board of directors on October 7, 2021, approved by our sole stockholder on October 7, 2021 and will become effective upon the date immediately preceding the date on which the registration statement of which this information statement is part is declared effective by the SEC. The 2021 Plan allows us to make equity-based and cash-based incentive awards to our officers, employees, directors and consultants.

We have initially reserved (a) 2,301,450 shares of our common stock plus (b) the number of shares of our common stock underlying 2seventy bio options and RSUs that will be issued pursuant to the adjustment of bluebird bio options and RSUs in accordance with the terms of the Employee Matters Agreement that we will enter into with bluebird bio in connection with the separation and distribution, for the issuance of awards under the 2021 Plan, or the Initial Limit. The 2021 Plan provides that the number of shares reserved and available for issuance under the 2021 Plan will automatically increase on January 1, 2022 and each January 1 thereafter, by 5% of the outstanding number of shares of our common stock on the immediately preceding December 31 or such lesser number of shares as determined by our compensation committee, or the Annual Increase. The number of shares reserved under the 2021 Plan is subject to adjustment in the event of a stock split, stock dividend or other change in our capitalization.

The shares we issue under the 2021 Plan will be authorized but unissued shares or shares that we reacquire. The shares of common stock underlying any awards under the 2021 Plan that are forfeited, cancelled, held back upon exercise or settlement of an award to satisfy the exercise price or tax withholding, reacquired by us prior to vesting, satisfied without the issuance of stock, expire or are otherwise terminated (other than by exercise) will be added back to the shares of common stock available for issuance under the 2021 Plan.

The maximum number of shares of common stock that may be issued in the form of incentive stock options shall not exceed the Initial Limit, cumulatively increased on January 1, 2022 and on each January 1 thereafter by the lesser of the Annual Increase for such year or 1,165,000 shares of common stock.

The grant date fair value of all awards made under our 2021 Plan and all other cash compensation paid by us to any non-employee director in any calendar year for services as a non-employee director shall not exceed the 75th percentile of the mean of the total amount of cash and equity compensation paid to non-employee directors of our then-applicable peer group; provided, however, that, for the Chair of our board of directors, such amount shall not exceed 1.25 times the average total compensation paid to incumbent non-employee directors for such year.

The 2021 Plan will be administered by our compensation committee. Our compensation committee has the full power to select, from among the individuals eligible for awards, the individuals to whom awards will be granted and the number of shares subject to such awards, to make any combination of awards to participants, to accelerate at any time the exercisability or vesting of any award and to determine the specific terms and conditions of each award, subject to the provisions of the 2021 Plan. Persons eligible to participate in the 2021 Plan will be those full or part-time officers, employees, non-employee directors and consultants as selected from time to time by our compensation committee in its discretion.

The 2021 Plan permits the granting of both options to purchase common stock intended to qualify as incentive stock options under Section 422 of the Code and options that do not so qualify. The option exercise price of each option will be determined by our compensation committee but generally may not be less than 100% of the fair market value of our common stock on the date of grant unless the option (i) is granted pursuant to a transaction described in, and in a manner consistent with Section 424(a) of the Code, (ii) is granted to an individual who is not subject to U.S. income tax, or (iii) complies with Section 409A of the Code. The term of each option will be fixed by our compensation committee and may not exceed 10 years from the date of grant. Our compensation committee will determine at what time or times each option may be exercised.

Our compensation committee may award stock appreciation rights under the 2021 Plan subject to such conditions and restrictions as it may determine. Stock appreciation rights entitle the recipient to shares of common stock, or cash, equal to the value of the appreciation in our stock price over the exercise price. The exercise price of each stock appreciation right will be determined by our compensation committee but generally may not be less than 100% of the fair market value of our common stock on the date of grant unless the stock appreciation right (i) is granted pursuant to a transaction described in, and in a manner consistent with Section 424(a) of the Code, (ii) is granted to an individual who is not subject to U.S. income tax, or (iii) complies with Section 409A of the Code. The term of each stock appreciation right will be fixed by our compensation committee and may not exceed 10 years from the date of grant. Our compensation committee will determine at what time or times each stock appreciation right may be exercised.

Our compensation committee may award restricted shares of common stock and restricted stock units to participants subject to such conditions and restrictions as it may determine. These conditions and restrictions may include the achievement of certain performance goals and/or continued employment with us through a specified vesting period. Our compensation committee may also grant shares of common stock that are free from any restrictions under the 2021 Plan. Unrestricted stock may be granted to participants in recognition of past services or for other valid consideration and may be issued in lieu of cash compensation due to such participant.

Our compensation committee may grant dividend equivalent rights to participants that entitle the recipient to receive credits for dividends that would be paid if the recipient had held a specified number of shares of common stock.

Our compensation committee may grant cash bonuses under the 2021 Plan to participants, subject to the achievement of certain performance goals.

The 2021 Plan provides that upon the effectiveness of a “sale event,” as defined in the 2021 Plan, an acquirer or successor entity may assume, continue or substitute outstanding awards under the 2021 Plan. To the extent that awards granted under the 2021 Plan are not assumed or continued or substituted by the successor entity, upon the effective time of the sale event, such awards shall terminate. In such case, except as may be otherwise provided in

the relevant award certificate, all awards with time-based vesting, conditions or restrictions shall become fully vested and nonforfeitable as of the effective time of the sale event and all awards with conditions and restrictions relating to the attainment of performance goals may become vested and nonforfeitable in connection with a sale event in the administrator's discretion or to the extent specified in the relevant award certificate. In the event of such termination, (i) individuals holding options and stock appreciation rights will be permitted to exercise such options and stock appreciation rights (to the extent exercisable) within a specified period of time prior to the sale event or (ii) we may make or provide for a payment, in cash or in kind, to participants holding vested and exercisable options and stock appreciation rights equal to the difference between the per share consideration payable to stockholders in the sale event and the exercise price of the options or stock appreciation rights and we may make or provide for a payment, in cash or in kind, to participants holding other vested awards.

Our board of directors may amend or discontinue the 2021 Plan and our compensation committee may amend or cancel outstanding awards for purposes of satisfying changes in law or any other lawful purpose, but no such action may adversely affect rights under an award without the holder's consent. Certain amendments to the 2021 Plan require the approval of our stockholders. The administrator of the 2021 Plan is specifically authorized to exercise its discretion to reduce the exercise price of outstanding stock options and stock appreciation rights or effect the repricing of such awards through cancellation and re-grants without stockholder consent. No awards may be granted under the 2021 Plan after the date that is 10 years from the effective date of the 2021 Plan. No awards under the 2021 Plan have been made prior to the date of this prospectus.

Employee Stock Purchase Plan

Our ESPP was adopted by our board of directors on October 7, 2021, approved by our sole stockholder on October 7, 2021 and will become effective upon the date immediately preceding the date on which the registration statement of which this information statement is part is declared effective by the SEC. The ESPP is intended to qualify as an "employee stock purchase plan" within the meaning of Section 423 of the Code. The ESPP initially reserves and authorizes the issuance of up to a total of 233,302 shares of our common stock to participating employees. The ESPP provides that the number of shares reserved and available for issuance will automatically increase on January 1, 2022 and each January 1 thereafter through January 1, 2031, by the least of (i) 233,302 shares of common stock, (ii) 1% of the outstanding number of shares of common stock on the immediately preceding December 31, or (iii) such lesser number of shares of common stock as determined by the administrator of the ESPP. The number of shares reserved under the ESPP is subject to adjustment in the event of a stock split, stock dividend or other change in our capitalization.

All employees who are customarily employed by us or one of our designated subsidiaries for more than 20 hours per week and who we have employed for at least six months are eligible to participate in the ESPP. However, any employee who owns 5% or more of the total combined voting power or value of all classes of our stock will not be eligible to purchase shares of common stock under the ESPP.

We may make one or more offerings each year to our employees to purchase shares under the ESPP. Offerings will usually begin on each May 1 and November 1 and will generally continue for six-month periods, referred to as offering periods. Each eligible employee may elect to participate in any offering by submitting an enrollment form at least 15 business days before the applicable offering date.

Each employee who is a participant in the ESPP may purchase shares of our common stock by authorizing payroll deductions of up to 10% of his or her eligible compensation during an offering period. Unless the participating employee has previously withdrawn from the offering, his or her accumulated payroll deductions will be used to purchase shares of our common stock on the last business day of the offering period at a price equal to 85% of the fair market value of the shares of our common stock on the first business day or the last business day of the offering period, whichever is lower, provided that no more $25,000 worth of common stock (or such other lesser maximum number of shares as may be established by the administrator) may be purchased by any one employee during any offering period. Under applicable tax rules, an employee may purchase no more than $25,000 worth of shares of our common stock, valued at the start of the purchase period, under the ESPP in any calendar year.

The accumulated payroll deductions of any employee who is not a participant on the last day of an offering period will be refunded. An employee's rights under the ESPP terminate upon voluntary withdrawal from the plan or when the employee ceases employment with us for any reason.

The ESPP may be terminated or amended by our board of directors at any time. An amendment that increases the number of shares of our common stock authorized under the ESPP and certain other amendments require the approval of our stockholders.

Senior Executive Cash Incentive Bonus Plan

On October 7, 2021 our board of directors adopted the Bonus Plan. The Bonus Plan provides for annual cash bonus payments based upon the attainment of company and individual performance targets established by our compensation committee. The payment targets will be related to financial and operational measures or objectives with respect to our company, or the Corporate Performance Goals, as well as individual performance objectives.

Our compensation committee may select Corporate Performance Goals from among the following: cash flow (including, but not limited to, operating cash flow and free cash flow); revenue; corporate revenue; earnings before interest, taxes, depreciation and amortization; net income (loss) (either before or after interest, taxes, depreciation and/or amortization); changes in the market price of our common stock; economic value-added; acquisitions or strategic transactions, including collaborations, joint ventures or promotion arrangements; operating income (loss); return on capital assets, equity, or investment; stockholder returns; return on sales; gross or net profit levels; productivity; expense efficiency; margins; operating efficiency; customer satisfaction; working capital; earnings (loss) per share of our common stock; bookings, new bookings or renewals; sales or market shares; number of customers, number of new customers or customer references; operating income and/or net annual recurring revenue; or any other performance goal as selected by the compensation committee, any of which may be measured in absolute terms, as compared to any incremental increase, in terms of growth, as compared to results of a peer group, against the market as a whole, compared to applicable market indices and/or measured on a pre-tax or post-tax basis.

Each executive officer who is selected to participate in the Bonus Plan will have a target bonus opportunity set for each performance period. The bonus formulas will be adopted in each performance period by the compensation committee and communicated to each executive. The Corporate Performance Goals will be measured at the end of each performance period after our financial reports have been published or such other appropriate time as the compensation committee determines. If the Corporate Performance Goals and individual performance objectives are met, payments will be made as soon as practicable following the end of each performance period, but no later than 74 days after the end of the fiscal year in which such performance period ends. Subject to the rights contained in any agreement between the executive officer and us, an executive officer must be employed by us on the bonus payment date to be eligible to receive a bonus payment. The Bonus Plan also permits the compensation committee to approve additional bonuses to executive officers in its sole discretion.

Limitations on Liability and Indemnification Matters

As permitted by Delaware law, provisions in our amended and restated certificate of incorporation, which will become effective upon the separation, and amended and restated bylaws, which will become effective upon the separation, limit or eliminate the personal liability of directors for a breach of their fiduciary duty of care as a director. The duty of care generally requires that, when acting on behalf of the corporation, a director exercise an informed business judgment based on all material information reasonably available to him or her. Consequently, a director will not be personally liable to us or our stockholders for monetary damages or breach of fiduciary duty as a director, except for liability for:

- any breach of the director's duty of loyalty to us or our stockholders;
- any act or omission not in good faith or that involves intentional misconduct or a knowing violation of law;
- any act related to unlawful stock repurchases, redemptions or other distributions or payments of dividends; or

- any transaction from which the director derived an improper personal benefit.

These limitations of liability do not limit or eliminate our rights or any stockholder's rights to seek non-monetary relief, such as injunctive relief or rescission. These provisions will not alter a director's liability under other laws, such as the federal securities laws or other state or federal laws. Our amended and restated certificate of incorporation will also authorize us to indemnify our officers, directors and other agents to the fullest extent permitted under Delaware law.

As permitted by Delaware law, our amended and restated bylaws will provide that:

- we will indemnify our directors, officers, employees and other agents to the fullest extent permitted by law;
- we must advance expenses to our directors and officers, and may advance expenses to our employees and other agents, in connection with a legal proceeding to the fullest extent permitted by law; and
- the rights provided in our amended and restated bylaws are not exclusive.

If Delaware law is amended to authorize corporate action further eliminating or limiting the personal liability of a director or officer, then the liability of our directors or officers will be so eliminated or limited to the fullest extent permitted by Delaware law, as so amended. Our amended and restated bylaws will also permit us to secure insurance on behalf of any officer, director, employee or other agent for any liability arising out of his or her actions in connection with their services to us, regardless of whether our bylaws permit such indemnification. We have obtained such insurance.

In addition to the indemnification that will be provided for in our amended and restated certificate of incorporation and amended and restated bylaws, we plan to enter into separate indemnification agreements with each of our directors and executive officers, which may be broader than the specific indemnification provisions contained in the Delaware General Corporation Law. These indemnification agreements may require us, among other things, to indemnify our directors and executive officers for some expenses, including attorneys' fees, expenses, judgments, fines and settlement amounts incurred by a director or executive officer in any action or proceeding arising out of his service as one of our directors or executive officers or any other company or enterprise to which the person provides services at our request. We believe that these provisions and agreements are necessary to attract and retain qualified individuals to serve as directors and executive officers.

This description of the indemnification provisions of our amended and restated certificate of incorporation, our amended and restated bylaws and our indemnification agreements is qualified in its entirety by reference to these documents, each of which is filed as an exhibit to the registration statement of which this information statement is a part.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to our directors, officers and controlling persons pursuant to the foregoing provisions, or otherwise, we have been advised that, in the opinion of the SEC, such indemnification is against public policy as expressed in the Securities Act, and is, therefore, unenforceable.

CERTAIN RELATIONSHIPS AND RELATED PERSON TRANSACTIONS

Relationship with bluebird bio

Prior to the completion of this separation, all of our outstanding shares of common stock are owned by bluebird bio. Following the completion of this separation, bluebird bio will no longer own any shares of our common stock. See “Risk Factors—Risks Related to the Separation” and “The Separation and Distribution”.

Following the distribution, 2seventy bio and bluebird bio will operate separately, each as an independent public company. In connection with this separation, we and bluebird bio have entered or will enter into certain agreements that will effect the separation of our business from bluebird bio and govern our relationship with bluebird bio after this separation. The following is a summary of the terms of the material agreements that we intend to enter into with bluebird bio prior to the completion of this separation, which are filed as exhibits to the registration statement of which this information statement is a part. These summaries set forth the terms of the agreements that we believe are material and are qualified in their entirety by reference to the full text of such agreements.

Agreements with bluebird bio

Separation Agreement

We intend to enter into a separation agreement with bluebird bio prior to the distribution of our common stock to bluebird bio stockholders. The separation agreement will set forth our agreements with bluebird bio regarding the principal actions to be taken in connection with the separation, including the distribution. The separation agreement will identify assets to be transferred, liabilities to be assumed and contracts to be assigned to each of 2seventy bio and bluebird bio as part of the separation, and it will provide for when and how these transfers, assumptions and assignments will occur.

Transfer of Assets and Assumption of Liabilities. The separation agreement will identify assets to be transferred, liabilities to be assumed and contracts to be assigned to each of bluebird bio and us as part of an internal reorganization, and will describe when and how these transfers, assumptions and assignments will occur, though certain of the transfers, assumptions and assignments will have already occurred prior to the parties' entering into the separation agreement. The separation agreement will provide for those transfers of assets and assumptions of liabilities that are necessary in connection with the separation so that we and bluebird bio retain the assets necessary to operate our respective businesses and retain or assume the liabilities allocated in accordance with the separation. The separation agreement will also provide for the settlement or extinguishment of certain liabilities and other obligations between us and bluebird bio.

Except as otherwise set forth in the separation agreement or any ancillary agreement, each party to the separation agreement will assume the liability for, and control of, all pending, threatened and future legal matters related to its own business or its assumed or retained liabilities. The allocation of liabilities with respect to taxes, except for payroll taxes and reporting and other tax matters expressly covered by the employee matters agreement, are solely covered by the tax matters agreement.

Further Assurances. Each party will agree to use commercially reasonable efforts to take or to cause to be taken all actions, and to do, or to cause to be done, all things reasonably necessary under applicable law or contractual obligations to consummate and make effective the transactions contemplated by the separation agreement and other transaction agreements.

Employee Non-Solicit and Non-Hire. Each of bluebird bio and 2seventy bio will be subject to mutual 12-month employee non-solicitation and non-hire obligations, subject to customary exceptions.

The Distribution. The separation agreement will govern the rights and obligations of the parties with respect to the distribution and certain actions that must occur prior to the distribution. bluebird bio will cause its agent to distribute to holders of shares of bluebird bio’s common stock as of the record date for the distribution all of the issued and outstanding shares of our common stock. bluebird bio will have the sole and absolute discretion to determine (and change) the terms of, and whether to proceed with, the distribution and, to the extent it determines to so proceed, to determine the date of the distribution.

Conditions. The separation agreement will provide that the distribution is subject to several conditions that must be satisfied (or waived by bluebird bio, in its sole discretion). bluebird bio may, in its sole discretion, determine the record date, the distribution date and the terms of the distribution and may at any time prior to the completion of the distribution decide to abandon or modify the distribution. For further information regarding these conditions, see "The Separation and Distribution—Conditions to the Distribution."

Indemnification. The separation agreement will provide for releases, with respect to pre-distribution claims, and cross-indemnities, with respect to post-distribution claims, that, except as otherwise provided in the separation agreement, are principally designed to place financial responsibility for the obligations and liabilities allocated to us under the separation agreement with us and financial responsibility for the obligations and liabilities allocated to bluebird bio under the separation agreement with bluebird bio. The separation agreement will also specify procedures with respect to claims subject to indemnification and related matters. Indemnification with respect to taxes will be governed by the tax matters agreement described below.

Term/Termination. Prior to the distribution, bluebird bio will have the unilateral right to terminate, modify or amend the terms of the separation agreement and amend, modify or abandon the distribution. After the effective time of the distribution, the term of the separation agreement is indefinite and it may only be terminated with the prior written consent of both bluebird bio and 2seventy bio.

Other Matters Governed by the Separation Agreement. Other matters governed by the separation agreement include, without limitation, access to financial and other information, insurance, confidentiality and access to and provision of records.

Transition Services Agreements

bluebird bio Transitional Services. Historically, bluebird bio has provided us significant corporate and shared services and resources related to corporate functions such as finance, human resources, internal audit, research and development, financial reporting, and information technology, which we refer to collectively as the " bluebird bio Services." This transition services agreement will become operative as of the completion of this separation and each of the bluebird bio Services will continue for an initial term of two years, unless earlier terminated or extended according to the terms of the transition services agreement. We will pay bluebird bio fees for the bluebird bio Services, to be mutually agreed upon by us and bluebird bio as provided under this transition services agreement, which fees will be based on bluebird bio's cost of providing the bluebird bio Services.

2seventy bio Transitional Services. We also intend to enter into a second transition services agreement whereby we will provide certain services to bluebird bio, which we refer to collectively as the "2seventy bio Services." This second transition services agreement will become operative as of the completion of this separation and each of the 2seventy bio Services will continue for an initial term of two years, unless earlier terminated or extended according to the terms of the transition services agreement. bluebird bio will pay us fees for the 2seventy bio Services, to be mutually agreed upon by us and bluebird bio as provided under this transition services agreement, which fees will be based on our cost of providing the 2seventy bio Services.

Intellectual Property License Agreement

We intend to enter into an intellectual property license agreement with bluebird bio prior to the distribution pursuant to which each party will grant a license to certain intellectual property and technology. bluebird bio will grant 2seventy bio a perpetual, worldwide, non-exclusive, royalty-free, fully paid-up license (or, as the case may be, sublicense) to certain intellectual property to allow 2seventy bio to use such intellectual property in connection with 2seventy bio's ongoing and future research and development activities and product candidates. 2seventy bio will grant bluebird bio a perpetual, worldwide, non-exclusive, royalty-free, fully paid-up license (or, as the case may be, sublicense) to certain intellectual property for use in bluebird bio's existing products and product candidates. Such licenses between the parties generally will allow current or future uses of the intellectual property in connection with each party's respective fields.

Tax Matters Agreement

We intend to enter into a tax matters agreement with bluebird bio prior to or concurrently with the completion of the separation that will govern bluebird bio's and 2seventy bio's respective rights, responsibilities and obligations

with respect to taxes (including taxes arising in the ordinary course of business and taxes, if any, incurred as a result of any failure of the distribution and certain related transactions to qualify as tax-free for U.S. federal income tax purposes), tax attributes, the preparation and filing of tax returns, the control of audits and other tax proceedings, and assistance and cooperation in respect of tax matters.

In addition, the tax matters agreement will impose certain restrictions on us and our subsidiaries (including restrictions on share issuances, business combinations, sales of assets and similar transactions) that will be designed to preserve the tax-free status of the distribution and certain related transactions. The tax matters agreement will provide special rules that allocate tax liabilities in the event the distribution, together with certain related transactions, is not tax-free. In general, under the terms of the tax matters agreement, if the distribution, together with certain related transactions, were to fail to qualify as a transaction that is generally tax-free, for U.S. federal income tax purposes, under Sections 355 and 368(a)(1)(D) of the Code, and if and to the extent that such failure results from a prohibited change of control in bluebird bio under Section 355(e) of the Code or an acquisition of bluebird bio stock or assets or certain actions, omissions or failures to act, by bluebird bio, then bluebird bio will bear any resulting taxes, interest, penalties and other costs. If and to the extent that such failure results from a prohibited change of control in 2seventy bio under Section 355(e) of the Code or an acquisition of our stock or assets or certain actions by us, then we will indemnify bluebird bio for any resulting taxes, interest, penalties and other costs, including any reductions in bluebird bio's net operating loss carryforwards or other tax assets. If such failure does not result from a prohibited change of control in bluebird bio or 2seventy bio under Section 355(e) of the Code and both we and bluebird bio are responsible for such failure, liability will be shared according to relative fault. If neither we nor bluebird bio is responsible for such failure, bluebird bio will bear any resulting taxes, interest, penalties and other costs.

Employee Matters Agreement

We intend to enter into an employee matters agreement with bluebird bio prior or concurrently with the completion of this separation. The employee matters agreement allocates assets, liabilities and responsibilities relating to the employment, compensation, and employee benefits of bluebird bio and 2seventy bio employees, and other related matters in connection with the separation, including the treatment of outstanding incentive equity awards and certain retirement and welfare benefit obligations. The employee matters agreement will generally provide that, unless otherwise specified, 2seventy bio will be responsible for liabilities associated with employees who transfer to 2seventy bio and employees whose employment terminated prior to the distribution but who primarily supported the 2seventy bio business, whether incurred prior to or after the distribution, and bluebird bio will be responsible for liabilities associated with other employees, including employees retained by bluebird bio.

2seventy bio 401(k) Plan

The employee matters agreement will provide that bluebird bio will cause 2seventy bio to adopt a defined contribution 401(k) plan, which will be substantially similar in all material respects to bluebird bio's 401(k) plan. The assets and liabilities under the bluebird bio 401(k) plan with respect to 2seventy employees will be transferred to the 2seventy 401(k) plan.

2seventy bio Health and Welfare Plans

The employee matters agreement will provide that 2seventy bio will establish health and welfare plans that generally correspond to the bluebird bio health and welfare plans in which 2seventy bio employees participate immediately prior to the distribution. 2seventy bio employees will be eligible to participate in 2seventy bio's health and welfare plans as of the distribution date. bluebird bio will generally retain liability for claims incurred under bluebird bio's health and welfare plans for 2seventy bio employees prior to the distribution. 2seventy bio will generally assume liability for claims incurred under bluebird bio's health and welfare plans following the distribution.

To the extent practicable, 2seventy bio will cause its plans to waive any preexisting condition limitations. 2seventy bio will also cause its medical plan to honor any deductibles incurred by 2seventy bio employees under a bluebird bio medical plan during the portion of the calendar year prior to the distribution for purposes of satisfying deductibles and out-of-pocket maximums.

2seventy bio Omnibus Plan; 2seventy bio Employee Stock Purchase Plan

The employee matters agreement will provide that, prior to the distribution, bluebird bio will cause 2seventy bio to adopt an omnibus equity incentive plan and an employee stock purchase plan intended to meet the requirements of Section 423 of the Code, and take all actions that may be necessary to approve such plans in order to satisfy the requirements of the Code and the regulations of the Nasdaq Global Select Market.

Equity Compensation

The employee matters agreement will provide that outstanding bluebird bio equity awards held by bluebird bio and 2seventy bio employees will be adjusted in accordance with the following principles:

- For each award, the intent is to maintain, immediately following the distribution date, the economic value of the award immediately before the distribution date.
- For both 2seventy bio and bluebird bio employees, bluebird equity awards granted prior to January 1, 2021 will be converted into equity awards of both bluebird bio and 2seventy bio. The number of shares underlying the converted bluebird bio equity awards will be determined by multiplying the number of shares underlying the existing bluebird bio equity award by a fraction, the numerator of which is the volume-weighted average trading price of bluebird bio common stock (trading "regular way") on the five trading days immediately prior to the distribution date and the denominator of which is the sum of (1) the volume-weighted average trading price of 2seventy bio common stock (trading "regular way") on the five trading days immediately following the distribution date multiplied by the distribution ratio and (2) the volume-weighted average trading price of bluebird bio common stock (trading "regular way") on the five trading days immediately following the distribution date. The number of shares underlying the converted 2seventy bio equity awards will be determined by multiplying the number of shares underlying the existing bluebird bio equity awards by a fraction, the numerator of which is the volume-weighted average trading price of bluebird bio common stock (trading "regular way") on the five trading days immediately prior to the distribution date and the denominator of which is the sum of (1) the volume-weighted average trading price of 2seventy bio common stock (trading "regular way") on the five trading days immediately following the distribution date multiplied by the distribution ratio and (2) the quotient obtained by dividing the volume-weighted average trading price of bluebird bio common stock (trading "regular way") on the five trading days immediately following the distribution date by the distribution ratio.
- For bluebird bio employees holding bluebird bio equity awards granted on or after January 1, 2021, such equity awards will continue as bluebird bio equity awards, subject to adjustment. The number of shares of bluebird bio common stock underlying such adjusted equity awards will be equal to the number of shares of bluebird bio common stock subject to the equity award immediately prior to the distribution multiplied by a fraction, the numerator of which is the volume-weighted average trading price of bluebird bio common stock (trading "regular way") on the five trading days immediately prior to the distribution date and the denominator of which is the volume-weighted average trading price of bluebird bio common stock (trading "regular way") on the five trading days immediately following the distribution date.
- For 2seventy bio employees holding bluebird equity awards granted on or after January 1, 2021, such equity awards will be converted into 2seventy bio equity awards. The number of shares of 2seventy common stock underlying such converted equity awards will be equal to the number of shares of bluebird bio common stock subject to the equity award immediately prior to the distribution multiplied by a fraction, the numerator of which is the volume-weighted average trading price of bluebird bio common stock (trading "regular way") on the five trading days immediately preceding the distribution date and the denominator of which is the volume-weighted average trading price of 2seventy bio common stock (trading "regular way") on the five trading days immediately following the distribution date.

To the extent any adjustments to outstanding equity awards result in fractional interests in shares, the fractional interests will be rounded down to the nearest whole share.

At the time of the distribution, it is expected that each bluebird bio equity award to be converted into a 2seventy bio equity award will be subject to substantially the same terms and vesting conditions as were applicable to the bluebird bio equity awards prior to the distribution.

Private Placement

On September 10, 2021, pursuant to a securities purchase agreement among bluebird bio and certain institutional investors (the "institutional investors"), bluebird bio completed a private placement exempt from the registration requirements of the Securities Act in which it issued and sold to 2,272,727 shares of bluebird bio common stock at a purchase price of $16.50 per share and pre-funded warrants to purchase 2,272,727 shares of bluebird bio common stock at a purchase price of $16.49 per pre-funded warrant (representing the $16.50 per share purchase price less the exercise price of $0.01 per share). In connection with the distribution and pursuant to the terms of the securities purchase agreement, 2seventy bio will issue to each investor holding a bluebird bio pre-funded warrant a new pre-funded warrant for the number of shares of 2seventy bio common stock that the investor would have been entitled to receive in connection with the distribution had the unexercised portion of such pre-funded warrant at the effective time of the distribution been fully exercised at the effective time of the distribution.

In connection with this financing, bluebird bio and the investors entered into a registration rights agreement with respect to the investors' shares of bluebird bio common stock and any common stock issued or issuable upon exercise of the pre-funded warrants. Pursuant to the securities purchase agreement bluebird bio agreed to cause 2seventy bio to assume all of bluebird bio's obligations under the registration rights agreement in connection with the shares of 2seventy bio common stock that the investors will receive in the distribution with respect to the shares of bluebird bio common stock they hold and any shares of 2seventy bio common stock that the investors receive upon exercise of the pre-funded warrants. Pursuant to the registration rights agreement, following demand by any investor at any time such investor could reasonably be deemed to be an affiliate (as defined and used in Rule 144 as promulgated under the Securities Act) of 2seventy bio, to (i) file with the SEC a Registration Statement on Form S-3 covering the resale of the shares of 2seventy bio common stock issued to it in the distribution in respect of the purchased shares of bluebird bio common stock or issuable upon exercise of the pre-funded warrants by the investors as promptly as reasonably practicable following such demand, and in any event within 60 days after such demand, or (ii) to effect one underwritten offering per calendar year, but no more than three underwritten offerings in total, and no more than two underwritten offerings or block trades in any twelve month period. bluebird bio also agreed to cause 2seventy bio to assume all of bluebird bio's obligations under Article IV of the securities purchase agreement in connection with the shares of 2seventy bio common stock that the investors will receive in the distribution with respect to the shares of bluebird bio common stock they hold and any shares of 2seventy bio common stock that the investors receive upon exercise of the pre-funded warrant 2seventy bio will issue to them.

Related Party Transactions Policy

In connection with this separation, we plan to adopt a related party transactions policy that will govern the review and approval of related party transactions following this separation. Pursuant to this policy, if we want to enter into a transaction with a related party or an affiliate of a related party, our audit committee will review the proposed transaction to determine, based on applicable rules of Nasdaq and the SEC, whether such transaction requires pre-approval by our audit committee or our board of directors. If pre-approval is required, the proposed transaction will be reviewed at the next regular or special meeting of our audit committee or our board of directors, as applicable. We may not enter into a related party transaction unless our audit committee has specifically confirmed in writing that either no further reviews are necessary or that all requisite corporate reviews have been obtained.

Each of the agreements between us and bluebird bio and its subsidiaries that have been entered into prior to the completion of this separation, and any transactions contemplated thereby, will be deemed to be approved and not subject to the terms of such policy.

SECURITY OWNERSHIP BY CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

Prior to the distribution, all of the outstanding shares of our common stock will be owned beneficially and of record by bluebird bio. The following tables set forth information with respect to the expected beneficial ownership of our common stock immediately following the distribution: (i) each person who we believe will be a beneficial owner of more than five percent of our common stock, (ii) each of our expected directors and named executive officers and (iii) all of our expected directors and executive officers as a group. Except as noted below, we based the share amounts on each person's beneficial ownership of bluebird bio common stock as of September 27, 2021, after giving effect to a distribution ratio of one share of 2seventy bio common stock for every three shares of bluebird bio common stock. Immediately following the distribution, we estimate that 23,287,457 shares of our common stock will be issued and outstanding based on the number of shares of bluebird bio common stock outstanding as of September 27, 2021. The actual number of our outstanding shares of our common stock issued in the distribution will be determined on October 19, 2021, the record date. Unless otherwise indicated, the address of each beneficial owner is in care of bluebird bio, Inc., 60 Binney Street, Cambridge, MA 02142.

Security Ownership of Certain Beneficial Owners

Based solely on the information publicly available reporting beneficial ownership of bluebird bio common stock, we anticipate the following stockholders will beneficially own more than five percent of our common stock following the distribution.

Name of Beneficial Owner	Number of Shares of Our Common Stock	Percent of Shares Outstanding
Wellington Management Group LLP[1]	2,305,151	9.9%
The Vanguard Group[2]	2,265,839	9.7%
BlackRock, Inc.[3]	1,287,216	5.5%
Baker Bros Advisors LP[4]	1,590,812	6.5%

Security Ownership of Directors and Executive Officers

The following table provides information regarding beneficial ownership of our named executive officers, our expected directors and all of our expected directors and executive officers as a group as of September 27, 2021.

Name of Beneficial Owner	Number of Shares of Our Common Stock	Percent of Shares Outstanding
Nick Leschly[5]	386,216	1.6%
William D. Baird, III[6]	19,479	*
Philip Gregory, D. Phil.[7]	54,458	*
Daniel S. Lynch[8]	26,300	*
Sarah Glickman	—	—
Ramy Ibrahim, M.D.	—	—
Denice Torres [9]	916	*
Marcela Maus, M.D., Ph.D.	—	—
William R. Sellers, M.D.[10]	3,758	*
Directors and Officers as a Group (10 persons)	497,331	2.1%

* Less than one percent

(1) Based solely on a Schedule 13G/A reporting beneficial ownership of bluebird bio common stock as of February 26, 2021, filed with the SEC on March 10, 2021, Wellington Management Group LLP, Wellington Group Holdings LLP, and Wellington Investment Advisors Holdings LLP each has shared voting power with respect to 2,283,440 shares and shared dispositive power with respect to 2,305,151 shares,

and Wellington Management Company LLP has shared voting power with respect to 2,283,440 shares and shared dispositive power with respect to 2,283,440 shares. The address of Wellington Management Company LLP is 280 Congress Street, Boston, Massachusetts 02210.

(2) Based solely on a Schedule 13G/A reporting beneficial ownership of bluebird bio common stock as of March 31, 2021, filed with the SEC on April 12, 2021, The Vanguard Group has shared voting power with respect to 15,569 shares, sole dispositive power with respect to 2,231,435 shares, and shared dispositive power with respect to 34,404 shares. The address of The Vanguard Group is 100 Vanguard Blvd., Malvern, Pennsylvania 19355.

(3) Based solely on a Schedule 13G/A reporting beneficial ownership of bluebird bio common stock as of December 31, 2020, filed with the SEC on January 29, 2021, BlackRock, Inc. has sole voting power with respect to 1,207,586 shares and sole dispositive power with respect to 1,287,216 shares. The address of BlackRock, Inc. is 55 East 52nd Street, New York, New York 10055.

(4) Includes (a) (i) 771,476 shares of Common Stock and (ii) 702,276 shares of Common Stock underlying pre-funded warrants issued by 2seventy bio for the number of shares of 2seventy bio common stock that would have been issuable in the distribution had the unexercised portion of the pre-funded warrant issued by bluebird bio in the private placement been fully exercised at the effective time of the distribution, in each case held by Baker Brothers Life Sciences, L.P. (“BBLS”), and (b) (i) 61,761 shares of Common Stock and (ii) 55,299 shares of Common Stock underlying pre-funded warrants issued by 2seventy bio for the number of shares of 2seventy bio common stock that would have been issuable in the distribution had the unexercised portion of the pre-funded warrant issued by bluebird bio in the private placement been fully exercised at the effective time of the distribution, in each case held by 667, L.P. (“667”, and together with BBLS, the “BBA Funds”), disregarding for purposes of this beneficial ownership calculation the beneficial ownership limitation of 4.99% to which the exercise of the pre-funded warrants is subject. Baker Bros. Advisors LP (“BBA”), is the investment adviser to the BBA Funds and has sole voting and investment power with respect to the securities held by the BBA Funds and thus may be deemed to beneficially own such securities. Baker Bros. Advisors (GP) LLC (“BBA-GP”), is the sole general partner of BBA and thus may be deemed to beneficially own the securities held by the BBA Funds. The managing members of BBA-GP are Julian C. Baker and Felix J. Baker. The address for BBA, BBA-GP, Julian C. Baker and Felix J. Baker and the BBA Funds is 860 Washington Street, 3rd Floor, New York, NY 10014.

(5) Includes 248,538 shares of common stock issuable to Mr. Leschly upon the exercise of options that are exercisable within 60 days following September 27, 2021.

(6) Includes 16,803 shares of common stock issuable to Mr. Baird upon the exercise of options that are exercisable within 60 days following September 27, 2021.

(7) Includes 47,348 shares of common stock issuable to Dr. Gregory upon the exercise of options that are exercisable within 60 days following September 27, 2021.

(8) Includes 23,647 shares of common stock issuable to Mr. Lynch upon the exercise of options that are exercisable within 60 days following September 27, 2021.

(9) Includes 500 shares of common stock issuable to Ms. Torres upon the exercise of options that are exercisable within 60 days following September 27, 2021.

(10) Includes 2,777 shares of common stock issuable to Dr. Sellers upon the exercise of options that are exercisable within 60 days following September 27, 2021.

THE SEPARATION AND DISTRIBUTION

Overview

In January 2021, bluebird bio announced its plans to separate its oncology portfolio and programs from its severe genetic disease portfolio and programs through a pro rata distribution of 2seventy bio common stock to stockholders of bluebird bio. The distribution is intended to be generally tax-free for U.S. federal income tax purposes.

In furtherance of this plan, on September 30, 2021, bluebird bio's board of directors approved the distribution of all of the issued and outstanding shares of 2seventy bio common stock on the basis of one share of 2seventy bio common stock for every three shares of bluebird bio common stock issued and outstanding as of the close of business on October 19, 2021, the record date for the distribution. As a result of the distribution, 2seventy bio and bluebird bio will become two independent, publicly traded companies.

On November 4, 2021, the distribution date, each bluebird bio stockholder will receive one share of 2seventy bio common stock for every three shares of bluebird bio common stock held of record at the close of business on the record date, as described below. Registered stockholders will receive cash in lieu of any fractional shares of 2seventy bio common stock that they would have received as a result of the application of the distribution ratio. Stockholders will not be required to make any payment, surrender or exchange their bluebird bio common stock or take any other action to receive shares of 2seventy bio common stock in the distribution.

The distribution of 2seventy bio common stock as described in this information statement is subject to the satisfaction or waiver of certain conditions. For a more detailed description of these conditions, see this section under "—Conditions to the Distribution."

Reasons for the Separation

bluebird bio's board of directors determined that separating its oncology portfolio and programs from its severe genetic disease business would be in the best interests of bluebird bio and its stockholders and approved the plan of separation. A wide variety of factors were considered by bluebird bio's board of directors in evaluating the separation. Among other things, bluebird bio's board of directors considered the following potential benefits of the separation:

- the separation will allow each business to pursue its own operational and strategic priorities and more quickly respond to trends, developments and opportunities in its respective markets;
- the separation will create two separate and distinct management teams focused on each business's unique strategic priorities, target markets and corporate development opportunities;
- the separation will give each business opportunity and flexibility by pursuing its own investment, capital allocation and growth strategies consistent with its long-term objectives;
- the separation will enable the boards and management teams of each business to better align corporate performance goals with the specific vision, strategy, and objectives of each business; and
- the separation will allow investors to separately value each business based on the unique merits, performance and future prospects of each business, providing investors with two distinct investment opportunities.

bluebird bio's board of directors also considered a number of potentially negative factors in evaluating the separation, including the following factors impacting 2seventy bio:

- bluebird bio and 2seventy bio may not achieve the anticipated benefits of the separation for a variety of reasons, including: (i) the separation will require significant amounts of management's time and effort, which may divert management's attention from operating and growing the bluebird bio and 2seventy bio

businesses and (ii) following the separation, each business will be less diversified than bluebird bio's business prior to the separation;

- costs and liabilities that were less significant to bluebird bio as a whole will be more significant for 2seventy bio as a stand-alone company, and after the distribution, as a separate, independent entity, 2seventy bio may be unable to obtain goods, services, and technologies at prices or on terms as favorable as those bluebird bio obtained prior to the distribution;
- 2seventy bio will incur costs in connection with the transition to being a stand-alone public company that will include establishment of accounting, tax, auditing, legal and other professional services costs, recruiting and relocation costs associated with hiring personnel new to 2seventy bio and costs to separate information systems;
- under the terms of the tax matters agreement that 2seventy bio intends to enter into with bluebird bio, for a period of two years following the distribution, 2seventy bio will be restricted from taking certain actions that could cause the distribution, together with certain related transactions, to fail to qualify as a tax-free transaction for U.S. federal income tax purposes, which may limit 2seventy bio's ability to pursue certain strategic transactions and equity issuances or engage in other transactions that might increase the value of its business; and
- the trading prices of 2seventy bio and bluebird bio common stock following the separation, and whether the combined market value of shares of 2seventy bio common stock and shares of bluebird bio common stock will be less than, equal to, or greater than the market value of shares of bluebird bio common stock prior to the separation, cannot be predicted with certainty.

bluebird bio's board of directors concluded that the potential benefits of the separation outweighed these factors. However, neither bluebird bio nor 2seventy bio can assure you that, following the separation, any of the benefits described above or otherwise will be realized to the extent anticipated or at all. For more information on the risks involved in the separation process, see "Risk Factors—Risks Related to the Separation."

Formation of a Holding Company Prior to the Distribution

In connection with and prior to the distribution, 2seventy bio was incorporated by bluebird bio in the State of Delaware on April 26, 2021, for the purpose of holding bluebird bio's oncology portfolio and programs in connection with the separation described herein. As part of the plan to create two independent public companies, bluebird bio plans to transfer the assets and liabilities of the oncology portfolio and programs to 2seventy bio and its subsidiaries prior to the distribution through an internal reorganization.

When and How You Will Receive the Distribution

With the assistance of the distribution agent, bluebird bio expects to distribute 2seventy bio common stock on November 4, 2021, the distribution date, to all holders of outstanding bluebird bio common stock as of the close of business on October 19, 2021, the record date. American Stock Transfer & Trust Company, LLC will serve as the distribution agent in connection with the distribution.

If you own bluebird bio common stock as of the close of business on the record date, 2seventy bio common stock that you are entitled to receive in the distribution will be issued electronically, as of the distribution date, to you in direct registration form or to your bank or brokerage firm on your behalf. If you are a registered holder, the distribution agent or the transfer agent will then mail you a direct registration account statement that reflects your shares of 2seventy bio common stock. "Direct registration form" refers to a method of recording share ownership when no physical share certificates are issued to stockholders, as is the case in this distribution.

Commencing on or shortly after the distribution date, if you hold physical share certificates that represent your bluebird bio common stock and you are the registered holder of the shares represented by those certificates, the distribution agent will mail to you an account statement that indicates the number of shares of 2seventy bio common stock that have been registered in book-entry form in your name, and the distribution agent will mail you a check for

any cash in lieu of fractional shares you are entitled to receive. If you sell bluebird bio common stock in the "regular way" market up to and including the distribution date, you will be selling your right to receive shares of 2seventy bio common stock in the distribution.

Most bluebird bio stockholders hold their common stock through a bank or brokerage firm. In such cases, the bank or brokerage firm would be said to hold the shares in "street name" and ownership would be recorded on the bank or brokerage firm's books. If you hold your bluebird bio common stock through a bank or brokerage firm, your bank or brokerage firm will credit your account for the 2seventy bio common stock that you are entitled to receive in the distribution. If you have any questions concerning the mechanics of having shares held in "street name," please contact your bank or brokerage firm.

Results of the Distribution

After its separation from bluebird bio, 2seventy bio will be an independent, publicly traded company. The actual number of shares to be distributed will be determined on October 19, 2021, the record date for the distribution, and will reflect any exercise of bluebird bio options between the date the bluebird bio board of directors declares the distribution and the record date for the distribution. The distribution will not affect the number of outstanding shares of bluebird bio common stock or any rights of bluebird bio's stockholders. bluebird bio will not distribute any fractional shares of 2seventy bio common stock.

Prior to the distribution, 2seventy bio intends to enter into a separation agreement and other agreements with bluebird bio to effect the separation and govern 2seventy bio's relationship with bluebird bio after the separation. These agreements will provide for the allocation between bluebird bio and 2seventy bio of bluebird bio's assets, liabilities and obligations (including employee benefits, intellectual property, and tax-related assets and liabilities) attributable to periods prior to and after 2seventy bio's separation from bluebird bio and will govern certain relationships between bluebird bio and 2seventy bio after the separation. For a more detailed description of these agreements, see "Certain Relationships and Related Person Transactions—Agreements with bluebird bio."

The Number of Shares of 2seventy bio Common Stock You Will Receive

For every three shares of bluebird bio common stock that you own at the close of business on October 19, 2021, the record date, you will receive one share of 2seventy bio common stock on the distribution date. bluebird bio will not distribute any fractional shares of 2seventy bio common stock to its stockholders. Instead, the distribution agent will aggregate fractional shares into whole shares, sell the whole shares in the open market at prevailing market prices and distribute the aggregate cash proceeds (net of discounts and commissions) of the sales pro rata (based on the fractional share such holder would otherwise have been entitled to receive) to each holder who otherwise would have been entitled to receive a fractional share in the distribution. The distribution agent, in its sole discretion, without any influence by bluebird bio or 2seventy bio, will determine when, how, through which broker-dealer and at what price to sell the whole shares. American Stock Transfer & Trust Company, LLC is not an affiliate of either bluebird bio or 2seventy bio. Any broker-dealer used by the transfer agent will not be an affiliate of either bluebird bio or 2seventy bio. Neither 2seventy bio nor bluebird bio will be able to guarantee any minimum sale price in connection with the sale of these shares. Recipients of cash in lieu of fractional shares will not be entitled to any interest on the amounts of payment made in lieu of fractional shares.

The aggregate net cash proceeds distributed to bluebird bio stockholders in lieu of fractional shares will be taxable for U.S. federal income tax purposes. See "Material U.S. Federal Income Tax Consequences" for an explanation of the material U.S. federal income tax consequences of the distribution. If you hold physical certificates for bluebird bio common stock and are the record holder, you will receive a check from the distribution agent in an amount equal to your pro rata share of the aggregate net cash proceeds of the sales. 2seventy bio estimates that it will take approximately from the distribution date for the distribution agent to complete the distributions of the aggregate net cash proceeds. If you hold your bluebird bio common stock through a bank or brokerage firm, your bank or brokerage firm will receive, on your behalf, your pro rata share of the aggregate net cash proceeds of the sales and will distribute to your account your share of such proceeds.

Transferability of Shares You Receive

Shares of 2seventy bio common stock distributed to holders through the distribution will be transferable without registration under the Securities Act, except for shares received by persons who may be deemed to be 2seventy bio affiliates. Persons who may be deemed to be 2seventy bio's affiliates after the distribution generally include individuals or entities that control, are controlled by or are under common control with 2seventy bio, which may include certain of 2seventy bio executive officers, directors or principal stockholders. Securities held by 2seventy bio affiliates will be subject to resale restrictions under the Securities Act. 2seventy bio affiliates will be permitted to sell shares of 2seventy bio common stock only pursuant to an effective registration statement or an exemption from the registration requirements of the Securities Act, such as the exemption afforded by Rule 144 promulgated under the Securities Act.

Market for 2seventy bio Common Stock

There is currently no public trading market for 2seventy bio common stock. 2seventy bio's common stock has been approved for listing on the Nasdaq Global Select Market under the symbol "TSVT". 2seventy bio has not and will not set the initial price of its common stock. The initial price will be established by the public markets.

2seventy bio cannot predict the price at which its common stock will trade after the distribution. In fact, the combined trading prices, after the distribution, of the shares of 2seventy bio common stock that each bluebird bio stockholder will receive in the distribution and bluebird bio common stock held at the record date may not equal the "regular way" trading price of a share of bluebird bio common stock immediately prior to the distribution. The price at which 2seventy bio common stock trades may fluctuate significantly, particularly until an orderly public market develops. Trading prices for 2seventy bio common stock will be determined in the public markets and may be influenced by many factors. See "Risk Factors—Risks Related to Ownership of Our Common Stock."

Trading Between the Record Date and Distribution Date

Beginning on or shortly before the record date and continuing up to and including through the distribution date, we expect that there will be two markets in bluebird bio common stock: a "regular way" market and an "ex-distribution" market. Shares of bluebird bio common stock that trade on the "regular way" market will trade with an entitlement to 2seventy bio common stock distributed pursuant to the separation. Shares of bluebird bio common stock that trade on the "ex-distribution" market will trade without an entitlement to 2seventy bio common stock distributed pursuant to the distribution. Therefore, if you sell bluebird bio common stock in the "regular way" market up to and including through the distribution date, you will be selling your right to receive 2seventy bio common stock in the distribution. If you own bluebird bio common stock at the close of business on the record date and sell those shares on the "ex-distribution" market up to and including through the distribution date, you will receive the shares of 2seventy bio common stock that you are entitled to receive pursuant to your ownership as of the record date of bluebird bio common stock.

Furthermore, we anticipate that trading in our common stock will begin on a "when issued" basis on or shortly before the record date for the distribution and will continue up to and including the distribution date. "When issued" trading in the context of a separation refers to a sale or purchase made conditionally on or before the distribution date because the securities of the separated entity have not yet been distributed. The "when issued" trading market will be a market for 2seventy bio common stock that will be distributed to holders of bluebird bio common stock on the distribution date. If you owned bluebird bio common stock at the close of business on the record date, you would be entitled to 2seventy bio common stock distributed pursuant to the distribution. You may trade this entitlement to shares of 2seventy bio common stock, without bluebird bio common stock you own, on the "when issued" market. On the first trading day following the distribution date, "when issued" trading with respect to 2seventy bio common stock will end, and "regular way" trading will begin.

Conditions to the Distribution

2seventy bio expects that the distribution will be effective at 12:01 a.m., Eastern Time, on November 4, 2021, the distribution date, provided that certain conditions shall have been satisfied or waived by bluebird bio in its sole discretion, including that bluebird bio will have received a private letter ruling from the IRS and an opinion from

Goodwin Procter LLP, both satisfactory to bluebird bio's board of directors and both continuing to be valid, together confirming that the distribution, together with certain related transactions generally is tax-free for U.S. federal income tax purposes under Sections 355 and 368(a)(1)(D) of the Code.

Neither bluebird bio, 2seventy bio nor Goodwin Procter LLP can assure you that any or all of these conditions will be met and, to the extent permissible under applicable law, bluebird bio in its sole discretion may waive any of the conditions to the distribution. In addition, bluebird bio will have the sole and absolute discretion to determine (and change) the terms of, and whether to proceed with, the distribution and, to the extent it determines to so proceed, to determine the record date for the distribution and the distribution date and the distribution ratio. bluebird bio does not intend to notify its stockholders of any modifications to the terms of the separation that, in the judgment of its board of directors, are not material. For example, the bluebird bio board of directors might consider material such matters as significant changes to the distribution ratio, the assets to be contributed or the liabilities to be assumed in the separation. To the extent that the bluebird bio board of directors determines that any modifications by bluebird bio materially change the material terms of the distribution or to abandon the distribution, bluebird bio will notify bluebird bio stockholders in a manner reasonably calculated to inform them about the modification as may be required by law, by, for example, publishing a press release, filing a Current Report on Form 8-K, or circulating a supplement to this information statement.

MATERIAL U.S. FEDERAL INCOME TAX CONSEQUENCES

The following is a discussion of material U.S. federal income tax consequences of the distribution of 2seventy bio common stock to "U.S. holders" (as defined below) of bluebird bio common stock. This summary is based on the Code, U.S. Treasury Regulations promulgated thereunder, rulings and other administrative pronouncements issued by the IRS, and judicial decisions, all as in effect on the date of this information statement, and all of which are subject to differing interpretation and change at any time, possibly with retroactive effect. This discussion applies only to U.S. holders of shares of bluebird bio common stock who hold such shares as capital assets within the meaning of Section 1221 of the Code (generally, property held for investment). This discussion is based upon the assumption that the distribution, together with certain related transactions, will be consummated in accordance with the separation agreement and the other separation-related agreements and as described in this information statement. This summary is for general information only and is not tax advice. It does not discuss all aspects of U.S. federal income taxation that may be relevant to particular holders in light of their particular circumstances or to holders subject to special rules under the Code (including, but not limited to, insurance companies, tax-exempt organizations, financial institutions, broker-dealers, partners in partnerships (or entities or arrangements treated as partnerships for U.S. federal income tax purposes) that hold bluebird bio common stock, pass-through entities (or investors therein), traders in securities who elect to apply a mark-to-market method of accounting, stockholders who hold bluebird bio common stock as part of a "hedge," "straddle," "conversion," "synthetic security," "integrated investment" or "constructive sale transaction," individuals who receive bluebird bio or 2seventy bio common stock upon the exercise of employee stock options or otherwise as compensation, holders that receive 2seventy bio common stock with respect to bluebird bio common stock that was acquired from bluebird bio for cash within 90 days of the distribution of 2seventy bio common stock, holders who are liable for the alternative minimum tax or any holders who actually or constructively own 5% or more of bluebird bio's common stock). This discussion also does not address any tax consequences arising under the unearned Medicare contribution tax pursuant to Section 1411 of the Code, nor does it address any tax considerations under state, local or foreign laws or U.S. federal laws other than those pertaining to the U.S. federal income tax. The distribution may be taxable under such other tax laws and all holders should consult their own tax advisors with respect to the applicability and effect of any such tax laws.

If a partnership, including for this purpose any entity or arrangement that is treated as a partnership for U.S. federal income tax purposes, holds bluebird bio common stock, the tax treatment of a partner in such partnership will generally depend upon the status of the partner and the activities of the partnership. Holders of bluebird bio common stock that are partnerships and partners in such partnerships should consult their own tax advisors about the U.S. federal income tax consequences of the distribution.

For purposes of this discussion, a "U.S. holder" is any beneficial owner of bluebird bio common stock that is, for U.S. federal income tax purposes:

- an individual who is a citizen or a resident of the United States;
- a corporation, or other entity taxable as a corporation for U.S. federal income tax purposes, created or organized under the laws of the United States, any state thereof or the District of Columbia;
- an estate, the income of which is subject to U.S. federal income taxation regardless of its source; or
- a trust, (i) if a court within the United States is able to exercise primary supervision over its administration and one or more United States persons have the authority to control all of its substantial decisions or (ii) that has a valid election in place under applicable Treasury Regulations to be treated as a United States person.

THE FOLLOWING DISCUSSION IS A SUMMARY OF MATERIAL U.S. FEDERAL INCOME TAX CONSEQUENCES OF THE DISTRIBUTION UNDER CURRENT LAW AND IS FOR GENERAL INFORMATION ONLY. ALL HOLDERS SHOULD CONSULT THEIR OWN TAX ADVISORS AS TO THE PARTICULAR TAX CONSEQUENCES OF THE DISTRIBUTION TO THEM, INCLUDING THE APPLICATION AND EFFECT OF U.S. FEDERAL, STATE, LOCAL AND FOREIGN TAX LAWS.

It is a condition to the distribution that bluebird bio receive a private letter ruling from the IRS, and an opinion from Goodwin Procter LLP, both satisfactory to bluebird bio's board of directors and both continuing to be valid, together confirming that the distribution, together with certain related transactions, generally is tax-free for U.S. federal income tax purposes under Sections 355 and 368(a)(1)(D) of the Code. bluebird bio has received a favorable private letter ruling from the IRS addressing one significant issue of the qualification of the distribution under Section 355 of the Code. However, the private letter ruling does not address the remaining issues that are relevant to determining whether the distribution, together with certain related transactions, qualifies as a transaction that is generally tax-free for U.S. federal income tax purposes. The IRS private letter ruling is, and any opinion of Goodwin Procter LLP will be, based, among other things, on various facts and assumptions, as well as certain representations, statements and undertakings from us and bluebird bio (including those relating to the past and future conduct of us and bluebird bio) and will be subject to certain caveats. If any of these facts, assumptions, representations, statements or undertakings is, or becomes, inaccurate or incomplete, or if we or bluebird bio breach any of our respective covenants relating to the separation, the IRS private letter ruling and any tax opinion may be invalid. Accordingly, notwithstanding receipt of the IRS private letter ruling and an opinion of Goodwin Procter LLP, the IRS could determine that the distribution and certain related transactions should be treated as taxable transactions for U.S. federal income tax purposes if it determines that any of the facts, assumptions, representations, statements or undertakings that were included in the request for such IRS private letter ruling or on which any such opinion was based are false or have been violated. In addition, an opinion of Goodwin Procter LLP represents the judgment of Goodwin Procter LLP, which is not binding on the IRS or any court. Accordingly, notwithstanding receipt by bluebird bio of the tax opinion and the IRS private letter ruling referred to above, the IRS could assert that the distribution and certain related transactions do not qualify for tax-free treatment for U.S. federal income tax purposes. If the IRS were successful in taking this position, bluebird bio, 2seventy bio and bluebird bio stockholders could be subject to significant U.S. federal income tax liability. See "—Material U.S. Federal Income Tax Consequences if the Distribution is Taxable" below.

Material U.S. Federal Income Tax Consequences if the Distribution, Together with Certain Related Transactions, Qualifies as a Transaction that is Generally Tax-Free Under Sections 355 and 368(a)(1)(D) of the Code

Assuming the distribution, together with certain related transactions, qualifies as a transaction that is generally tax-free, for U.S. federal income tax purposes, without regard to any 2seventy bio common stock distributed with respect to bluebird bio common stock that was acquired from bluebird bio for cash within 90 days of such distribution, under Sections 355 and 368(a)(1)(D) of the Code, the U.S. federal income tax consequences of the distribution generally are as follows:

- no gain or loss will be recognized by, and no amount will be includible in the income of bluebird bio as a result of the distribution;
- no gain or loss will be recognized by (and no amount will be included in the income of) U.S. holders of bluebird bio common stock, upon the receipt of 2seventy bio common stock in the distribution, except with respect to any cash received in lieu of fractional shares of 2seventy bio common stock (as described below);
- the aggregate tax basis of the bluebird bio common stock and the 2seventy bio common stock received in the distribution (including any fractional share interest in 2seventy bio common stock for which cash is received) in the hands of each U.S. holder of bluebird bio common stock immediately after the distribution will equal the aggregate basis of bluebird bio common stock held by the U.S. holder immediately before the distribution, allocated between the bluebird bio common stock and the 2seventy bio common stock (including any fractional share interest in 2seventy bio common stock for which cash is received) in proportion to the relative fair market value of each on the date of the distribution; and
- the holding period of the 2seventy bio common stock received by each U.S. holder of bluebird bio common stock in the distribution (including any fractional share interest in 2seventy bio common stock for which cash is received) will generally include the holding period at the time of the distribution for the bluebird bio common stock with respect to which the distribution is made.

A U.S. holder who receives cash in lieu of a fractional share of 2seventy bio common stock in the distribution will be treated as having sold such fractional share for cash, and will recognize capital gain or loss in an amount equal to the difference between the amount of cash received and such U.S. holder's adjusted tax basis in such fractional share. Such gain or loss will be long-term capital gain or loss if the U.S. holder's holding period for its bluebird bio common stock exceeds one year at the time of distribution.

If a U.S. holder of bluebird bio common stock holds different blocks of bluebird bio common stock (generally shares of bluebird bio common stock acquired on different dates or at different prices), such holder should consult its tax advisor regarding the determination of the basis and holding period of shares of 2seventy bio common stock received in the distribution in respect of particular blocks of bluebird bio common stock.

Material U.S. Federal Income Tax Consequences if the Distribution is Taxable

As discussed above, notwithstanding receipt by bluebird bio of the private letter ruling from the IRS and an opinion of Goodwin Procter LLP, the IRS could assert that the distribution does not qualify for generally tax-free treatment for U.S. federal income tax purposes. If the IRS were successful in taking this position, the consequences described above would not apply and bluebird bio, 2seventy bio and bluebird bio stockholders could be subject to significant U.S. federal income tax liability. In addition, certain events that may or may not be within the control of bluebird bio or 2seventy bio could cause the distribution and certain related transactions to not qualify for tax-free treatment for U.S. federal income tax purposes. Depending on the circumstances, 2seventy bio may be required to indemnify bluebird bio for taxes (and certain related losses) resulting from the distribution and certain related transactions not qualifying as generally tax-free for U.S. federal income tax purposes.

If the distribution were to fail to qualify as in general a tax-free transaction for U.S. federal income tax purposes, in general, bluebird bio would recognize taxable gain as if it had sold the 2seventy bio common stock that was distributed by bluebird bio in the distribution in a taxable sale for its fair market value (unless bluebird bio and 2seventy bio jointly make an election under Section 336(e) of the Code with respect to the distribution, in which case, in general, (i) the bluebird bio group would recognize taxable gain as if 2seventy bio had sold all of its assets in a taxable sale in exchange for an amount equal to the fair market value of 100% of the 2seventy bio common stock and the assumption of all 2seventy bio's liabilities and (ii) 2seventy bio would obtain a related step up in the basis of its assets), such gain may be partially offset by bluebird bio's net operating loss carryforward and bluebird bio stockholders who receive shares of 2seventy bio common stock in the distribution would be subject to tax as if they had received a taxable distribution equal to the fair market value of such shares.

Even if the distribution were otherwise to qualify as generally tax-free, for U.S. federal income tax purposes, under Sections 355 and 368(a)(1)(D) of the Code, it may result in taxable gain to bluebird bio under Section 355(e) of the Code if the distribution were later deemed to be part of a plan (or series of related transactions) pursuant to which one or more persons acquire, directly or indirectly, shares representing a 50% or greater interest (by vote or value) in bluebird bio or 2seventy bio. For this purpose, any acquisitions of bluebird bio or 2seventy bio shares within the period beginning two years before the distribution and ending two years after the distribution are presumed to be part of such a plan, although bluebird bio or 2seventy bio may be able to rebut that presumption.

In connection with the distribution, 2seventy bio and bluebird bio will enter into a tax matters agreement pursuant to which 2seventy bio will be responsible for certain liabilities and obligations following the distribution. In general, under the terms of the tax matters agreement, if the distribution, together with certain related transactions, were to fail to qualify as a transaction that is generally tax-free, for U.S. federal income tax purposes, under Sections 355 and 368(a)(1)(D) of the Code, and if and to the extent that such failure results from a prohibited change of control in bluebird bio under Section 355(e) of the Code or an acquisition of bluebird bio stock or assets or certain actions, omissions or failures to act, by bluebird bio, then bluebird bio will bear any resulting taxes, interest, penalties and other costs. If and to the extent that such failure results from a prohibited change of control in 2seventy bio under Section 355(e) of the Code or an acquisition of 2seventy bio stock or assets or certain actions by 2seventy bio, then 2seventy bio will indemnify bluebird bio for any resulting taxes, interest, penalties and other costs, including any reductions in bluebird bio’s net operating loss carryforwards or other tax assets. If such failure does not result from a prohibited change of control in bluebird bio or 2seventy bio under Section 355(e) of the Code and both 2seventy bio and bluebird bio are responsible for such failure, liability will be shared according to relative fault.

If neither 2seventy bio nor bluebird bio is responsible for such failure, bluebird bio will bear any resulting taxes, interest, penalties and other costs. For a discussion of the tax matters agreement, see “Certain Relationships and Related Person Transactions—Agreements with bluebird bio—Tax Matters Agreement.” The indemnification obligations of 2seventy bio to bluebird bio under the tax matters agreement are not expected to be limited in amount or subject to any cap. If 2seventy bio is required to pay any taxes or indemnify bluebird bio and its subsidiaries and their respective officers and directors under the circumstances set forth in the tax matters agreement, 2seventy bio may be subject to substantial liabilities.

Backup Withholding and Information Reporting

Payments of cash to U.S. holders of bluebird bio common stock in lieu of fractional shares of 2seventy bio common stock may be subject to information reporting and backup withholding (currently, at a rate of 24%), unless such U.S. holder delivers a properly completed IRS Form W-9 certifying such U.S. holder's correct taxpayer identification number and certain other information, or otherwise establishes an exemption from backup withholding. Backup withholding is not an additional tax. Any amounts withheld under the backup withholding rules may be refunded or credited against a U.S. holder's U.S. federal income tax liability provided that the required information is timely furnished to the IRS.

THE FOREGOING DISCUSSION IS A SUMMARY OF MATERIAL U.S. FEDERAL INCOME TAX CONSEQUENCES OF THE DISTRIBUTION UNDER CURRENT LAW AND IS FOR GENERAL INFORMATION ONLY. ALL HOLDERS SHOULD CONSULT THEIR OWN TAX ADVISORS AS TO THE PARTICULAR TAX CONSEQUENCES OF THE DISTRIBUTION TO THEM, INCLUDING THE APPLICATION AND EFFECT OF U.S. FEDERAL, STATE, LOCAL AND FOREIGN TAX LAWS.

DESCRIPTION OF 2SEVENTY BIO'S CAPITAL STOCK

The following description of our capital stock is intended as a summary only and is qualified in its entirety by reference to our charter and by-laws that will be in effect at the closing of this separation, which are filed as exhibits to the Form 10 of which this information statement is a part, and to the applicable provisions of the DGCL. The description of our capital stock reflects changes to our capital structure that will occur upon the closing of this separation.

General

Upon completion of this separation, our authorized capital stock will consist of 200,000,000 shares of common stock, par value $0.0001 per share, and 10,000,000 shares of preferred stock, par value $0.0001 per share, all of which shares of preferred stock will be undesignated.

As of September 30, 2021, 100 shares of our common stock were outstanding and held by one stockholder of record.

Common Stock

The holders of our common stock are entitled to one vote for each share held on all matters submitted to a vote of the stockholders. The holders of our common stock do not have any cumulative voting rights. Holders of our common stock are entitled to receive ratably any dividends declared by our board of directors out of funds legally available for that purpose, subject to any preferential dividend rights of any outstanding preferred stock. Our common stock has no preemptive rights, conversion rights or other subscription rights or redemption or sinking fund provisions.

In the event of our liquidation, dissolution or winding up, holders of our common stock will be entitled to share ratably in all assets remaining after payment of all debts and other liabilities and any liquidation preference of any outstanding preferred stock.

Preferred Stock

Upon the consummation of the separation, our board of directors will have the authority, without further action by our stockholders, to issue up to 10,000,000 shares of preferred stock in one or more series and to fix the rights, preferences, privileges and restrictions thereof. These rights, preferences and privileges could include dividend rights, conversion rights, voting rights, terms of redemption, liquidation preferences, sinking fund terms and the number of shares constituting, or the designation of, such series, any or all of which may be greater than the rights of common stock. The issuance of our preferred stock could adversely affect the voting power of holders of common stock and the likelihood that such holders will receive dividend payments and payments upon our liquidation. In addition, the issuance of preferred stock could have the effect of delaying, deferring or preventing a change in control of our Company or other corporate action. Upon consummation of this separation, no shares of preferred stock will be outstanding, and we have no present plan to issue any shares of preferred stock.

Anti-Takeover Effects of our Certificate of Incorporation and Bylaws and Delaware Law

Our certificate of incorporation and bylaws include a number of provisions that may have the effect of delaying, deferring or preventing another party from acquiring control of us and encouraging persons considering unsolicited tender offers or other unilateral takeover proposals to negotiate with our board of directors rather than pursue non-negotiated takeover attempts. These provisions include the items described below.

Board Composition and Filling Vacancies

Our certificate of incorporation provides for the division of our board of directors into three classes serving staggered three-year terms, with one class being elected each year. Our certificate of incorporation also provides that directors may be removed only for cause and then only by the affirmative vote of the holders of two-thirds or more of the shares then entitled to vote at an election of directors. Furthermore, any vacancy on our board of directors, however occurring, including a vacancy resulting from an increase in the size of our board, may only be filled by the

affirmative vote of a majority of our directors then in office even if less than a quorum. The classification of directors, together with the limitations on removal of directors and treatment of vacancies, has the effect of making it more difficult for stockholders to change the composition of our board of directors.

No Written Consent of Stockholders

Our certificate of incorporation provides that all stockholder actions are required to be taken by a vote of the stockholders at an annual or special meeting, and that stockholders may not take any action by written consent in lieu of a meeting. This limit may lengthen the amount of time required to take stockholder actions and would prevent the amendment of our bylaws or removal of directors by our stockholders without holding a meeting of stockholders.

Meetings of Stockholders

Our certificate of incorporation and bylaws provide that only a majority of the members of our board of directors then in office may call special meetings of stockholders and only those matters set forth in the notice of the special meeting may be considered or acted upon at a special meeting of stockholders. Our bylaws limit the business that may be conducted at an annual meeting of stockholders to those matters properly brought before the meeting.

Advance Notice Requirements

Our bylaws establish advance notice procedures with regard to stockholder proposals relating to the nomination of candidates for election as directors or new business to be brought before meetings of our stockholders. These procedures provide that notice of stockholder proposals must be timely given in writing to our corporate secretary prior to the meeting at which the action is to be taken. Generally, to be timely, notice must be received at our principal executive offices not less than 90 days nor more than 120 days prior to the first anniversary date of the annual meeting for the preceding year. Our bylaws specify the requirements as to form and content of all stockholders' notices. These requirements may preclude stockholders from bringing matters before the stockholders at an annual or special meeting.

Amendment to Certificate of Incorporation and Bylaws

Any amendment of our certificate of incorporation must first be approved by a majority of our board of directors, and if required by law or our certificate of incorporation, must thereafter be approved by a majority of the outstanding shares entitled to vote on the amendment and a majority of the outstanding shares of each class entitled to vote thereon as a class, except that the amendment of the provisions relating to stockholder action, board composition, and limitation of liability must be approved by not less than two-thirds of the outstanding shares entitled to vote on the amendment, and not less than two-thirds of the outstanding shares of each class entitled to vote thereon as a class. Our bylaws may be amended by the affirmative vote of a majority of the directors then in office, subject to any limitations set forth in the bylaws; and may also be amended by the affirmative vote of a majority of the outstanding shares entitled to vote on the amendment, voting together as a single class, except that the amendment of the provisions relating to notice of stockholder business and nominations and special meetings must be approved by not less than two-thirds of the outstanding shares entitled to vote on the amendment, and not less than two-thirds of the outstanding shares of each class entitled to vote thereon as a class, or, if our board of directors recommends that the stockholders approve the amendment, by the affirmative vote of the majority of the outstanding shares entitled to vote on the amendment, in each case voting together as a single class.

Undesignated Preferred Stock

Our certificate of incorporation provides for 10,000,000 authorized shares of preferred stock. The existence of authorized but unissued shares of preferred stock may enable our board of directors to discourage an attempt to obtain control of us by means of a merger, tender offer, proxy contest or otherwise. For example, if in the due exercise of its fiduciary obligations, our board of directors were to determine that a takeover proposal is not in the best interests of our stockholders, our board of directors could cause shares of preferred stock to be issued without stockholder approval in one or more private offerings or other transactions that might dilute the voting or other rights of the proposed acquirer or insurgent stockholder or stockholder group. In this regard, our certificate of

incorporation grants our board of directors broad power to establish the rights and preferences of authorized and unissued shares of preferred stock. The issuance of shares of preferred stock could decrease the amount of earnings and assets available for distribution to holders of shares of common stock. The issuance may also adversely affect the rights and powers, including voting rights, of these holders and may have the effect of delaying, deterring or preventing a change in control of us.

Choice of Forum

Our amended and restated bylaws will provide that, unless we consent in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware, or the Chancery Court, will be the sole and exclusive forum for state law claims for (i) any derivative action or proceeding brought on our behalf, (ii) any action asserting a claim of, or a claim based on, a breach of a fiduciary duty owed by any of our directors, officers or other employees to us or our stockholders, (iii) any action asserting a claim pursuant to any provision of the Delaware General Corporation Law, our certificate of incorporation or our bylaws, (iv) any action to interpret, apply, enforce or determine the validity of our certificate of incorporation or bylaws, or (v) any action asserting a claim governed by the internal affairs doctrine, or the Delaware Forum Provision. The Delaware Forum Provision does not apply to any causes of action arising under the Securities Act of 1933, as amended, or the Securities Act, or the Exchange Act. Our amended and restated bylaws will further provide that, unless we consent in writing to the selection of an alternative forum, the federal district courts of the United States of America will be the sole and exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act, or the Federal Forum Provision. Our amended and restated bylaws will provide that any person or entity purchasing or otherwise acquiring any interest in shares of our capital stock is deemed to have notice of and consented to the foregoing Delaware Forum Provision and the Federal Forum Provision; provided, however, that stockholders cannot and will not be deemed to have waived our compliance with the federal securities laws and the rules and regulations thereunder.

Section 203 of the Delaware General Corporation Law

Upon completion of the separation, we will be subject to the provisions of Section 203 of the Delaware General Corporation Law. In general, Section 203 prohibits a publicly held Delaware corporation from engaging in a "business combination" with an "interested stockholder" for a three-year period following the time that this stockholder becomes an interested stockholder, unless the business combination is approved in a prescribed manner. Under Section 203, a business combination between a corporation and an interested stockholder is prohibited unless it satisfies one of the following conditions:

- before the stockholder became interested, our board of directors approved either the business combination or the transaction which resulted in the stockholder becoming an interested stockholder;
- upon consummation of the transaction which resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the voting stock outstanding, shares owned by persons who are directors and also officers, and employee stock plans, in some instances, but not the outstanding voting stock owned by the interested stockholder; or
- at or after the time the stockholder became interested, the business combination was approved by our board of directors and authorized at an annual or special meeting of the stockholders by the affirmative vote of at least two-thirds of the outstanding voting stock which is not owned by the interested stockholder.

Section 203 defines a business combination to include:

- any merger or consolidation involving the corporation and the interested stockholder;
- any sale, transfer, lease, pledge or other disposition involving the interested stockholder of 10% or more of the assets of the corporation;
- subject to exceptions, any transaction that results in the issuance or transfer by the corporation of any stock of the corporation to the interested stockholder;

- subject to exceptions, any transaction involving the corporation that has the effect of increasing the proportionate share of the stock of any class or series of the corporation beneficially owned by the interested stockholder; and
- the receipt by the interested stockholder of the benefit of any loans, advances, guarantees, pledges, or other financial benefits provided by or through the corporation.

In general, Section 203 defines an interested stockholder as any entity or person beneficially owning 15% or more of the outstanding voting stock of the corporation and any entity or person affiliated with or controlling or controlled by the entity or person.

Nasdaq Global Select Market Listing

Our common stock has been approved for trading on the Nasdaq Global Select Market under the trading symbol “TSVT.”

Transfer Agent and Registrar

The transfer agent and registrar for our common stock will be American Stock Transfer & Trust Company, LLC.

Limitations of Liability and Indemnification Matters

For a discussion of liability and indemnification, see “Executive Compensation.”

Sale of Unregistered Securities

On April 26, 2021, in connection with the formation of 2seventy bio, Inc., we issued 100 shares of our common stock to bluebird bio. We did not register the issuance of such shares under the Securities Act because the issuance did not constitute a public offering and was made pursuant to Section 4(a)(2) of the Securities Act.

WHERE YOU CAN FIND MORE INFORMATION

We have filed a registration statement on Form 10 with the SEC with respect to the shares of our common stock being distributed as contemplated by this information statement. This information statement is a part of, and does not contain all of the information set forth in, the registration statement and the exhibits and schedules to the registration statement. For further information with respect to us and our common stock, please refer to the registration statement, including its exhibits and schedules. Statements made in this information statement relating to any contract or other document are not necessarily complete, and you should refer to the exhibits attached to the registration statement for copies of the actual contract or document. You may review a copy of the registration statement, including its exhibits and schedules, on the Internet website maintained by the SEC at www.sec.gov.

As a result of the distribution, we will become subject to the information and reporting requirements of the Exchange Act and, in accordance with the Exchange Act, we will file periodic reports, proxy statements and other information with the SEC, which will be available at www.sec.gov.

We intend to furnish holders of our common stock with annual reports containing consolidated financial statements prepared in accordance with GAAP and audited and reported on, with an opinion expressed, by an independent registered public accounting firm.

You should rely only on the information contained in this information statement or to which we have referred you. We have not authorized any person to provide you with different information or to make any representation not contained in this information statement.

2seventy bio, Inc.

Index to Combined Financial Statements

Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors of 2seventy bio, Inc.

Opinion on the Financial Statements

We have audited the accompanying combined balance sheets of 2seventy bio, Inc. (the Company) as of December 31, 2020 and 2019, the related combined statements of operations and comprehensive loss, equity and cash flows for each of the three years in the period ended December 31, 2020, and the related notes (collectively referred to as the "combined financial statements"). In our opinion, the combined financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2020 and 2019, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2020, in conformity with U.S. generally accepted accounting principles.

The Company's Ability to Continue as a Going Concern

The accompanying combined financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 1 to the combined financial statements, the Company has recurring losses from operations, has a working capital deficiency, and has stated that substantial doubt exists about the Company's ability to continue as a going concern. Management's evaluation of the events and conditions and management's plans regarding these matters are also described in Note 1. The combined financial statements do not include any adjustments that might result from the outcome of this uncertainty. Our opinion is not modified with respect to this matter.

Adoption of ASU No. 2016-02

As discussed in Note 2 to the combined financial statements, the Company changed its method of accounting for leases in 2019 due to the adoption of Accounting Standards Update (ASU) No. 2016-02, Leases (Topic 842), and the related amendments.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as

evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

s/ Ernst & Young LLP
We have served as the Company’s auditor since 2021.
Boston, Massachusetts
May 11, 2021

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2seventy bio, Inc.

Combined Balance Sheets
(in thousands)

	As of December 31,	
	2020	2019
Assets		
Current assets:		
Prepaid expenses	$ 14,413	$ 13,416
Receivables	10,691	7,426
Total current assets	25,104	20,842
Property, plant and equipment, net	144,025	132,290
Intangible assets, net	5,644	9,406
Goodwill	13,128	13,128
Operating lease right-of-use assets	116,456	125,231
Other non-current assets	8,263	14,052
Total assets	$ 312,620	$ 314,949
Liabilities and Equity		
Current liabilities:		
Accounts payable	$ 7,152	$ 20,389
Accrued expenses and other current liabilities	43,347	52,837
Operating lease liability, current portion	15,313	11,317
Deferred revenue, current portion	820	8,474
Collaboration research advancement, current portion	9,236	10,380
Total current liabilities	75,868	103,397
Deferred revenue, net of current portion	25,762	9,791
Collaboration research advancement, net of current portion	21,581	27,834
Operating lease liability, net of current portion	112,290	122,258
Other non-current liabilities	2,490	7,977
Total liabilities	237,991	271,257
Commitments and contingencies *Note 7*		
Equity:		
Net parent investment	74,629	43,692
Total equity	74,629	43,692
Total liabilities and equity	$ 312,620	$ 314,949

See accompanying notes to combined financial statements.

2seventy bio, Inc.

Combined Statements of Operations and Comprehensive Loss
(in thousands)

	Year ended December 31,		
	2020	**2019**	**2018**
Revenue:			
Service revenue	$ 111,452	$ 30,351	$ 44,533
Collaborative arrangement revenue	115,594	5,740	7,820
Royalty and other revenue	21,076	8,205	2,226
Total revenues	248,122	44,296	54,579
Operating expenses:			
Research and development	296,467	297,645	200,490
Selling, general and administrative	90,897	81,646	53,631
Cost of royalty and other revenue	5,396	2,978	885
Change in fair value of contingent consideration	(6,468)	2,747	2,999
Total operating expenses	386,292	385,016	258,005
Loss from operations	(138,170)	(340,720)	(203,426)
Interest expense	—	—	(15,486)
Other income, net	18,056	20,126	19,163
Loss before income taxes	(120,114)	(320,594)	(199,749)
Income tax (expense) benefit	—	—	—
Net loss and comprehensive loss	$ (120,114)	$ (320,594)	$ (199,749)

See accompanying notes to combined financial statements.

2seventy bio, Inc.

Combined Statements of Equity
(in thousands)

	Net parent investment
Balances at December 31, 2017	$ 21,313
Adjustment to beginning net parent investment from adoption of ASU 2014-09	(29,375)
Stock-based compensation	40,801
Transfers from bluebird bio	194,961
Net loss	(199,749)
Balances at December 31, 2018	27,951
Adjustment to beginning net parent investment from adoption of ASU 2016-02	6,564
Stock-based compensation	62,049
Transfers from bluebird bio	267,722
Net loss	(320,594)
Balances at December 31, 2019	43,692
Stock-based compensation	60,997
Transfers from bluebird bio	90,054
Net loss	(120,114)
Balances at December 31, 2020	$ 74,629

See accompanying notes to combined financial statements.

2seventy bio, Inc.

Combined Statements of Cash Flows
(in thousands)

	Year ended December 31,		
	2020	2019	2018
Cash flows from operating activities:			
Net loss	$ (120,114)	$ (320,594)	$ (199,749)
Adjustments to reconcile net loss to net cash used in operating activities:			
Change in fair value of contingent consideration	(6,468)	2,747	2,999
Depreciation and amortization	13,188	12,587	13,345
Stock-based compensation expense	60,997	62,049	40,801
Other non-cash items	73	110	207
Changes in operating assets and liabilities:			
Prepaid expenses and other assets	1,526	6,700	(18,938)
Operating lease right-of-use assets	13,764	12,214	—
Accounts payable	(13,240)	14,611	2,230
Accrued expenses and other liabilities	(7,479)	26,341	10,808
Operating lease liabilities	(10,960)	(2,309)	—
Deferred revenue	8,317	(16,674)	(41,872)
Collaboration research advancement	(7,397)	(5,739)	43,954
Net cash used in operating activities	(67,793)	(207,957)	(146,215)
Cash flows from investing activities:			
Purchase of property, plant and equipment	(22,261)	(59,765)	(50,827)
Net cash used in investing activities	(22,261)	(59,765)	(50,827)
Cash flows from financing activities:			
Transfers from bluebird bio	90,054	267,722	194,961
Reimbursement of tenant improvements for financing lease obligation	—	—	3,098
Payments on financing lease obligation	—	—	(1,017)
Net cash provided by financing activities	90,054	267,722	197,042
Increase (decrease) in cash, cash equivalents and restricted cash	—	—	—
Cash, cash equivalents and restricted cash at beginning of year	—	—	—
Cash, cash equivalents and restricted cash at end of year	$ —	$ —	$ —
Supplemental cash flow disclosures:			
Purchases of property, plant and equipment included in accounts payable and accrued expenses	$ 2,039	$ 3,064	$ 6,842
Right-of-use assets obtained in exchange for operating lease liabilities	$ 4,989	$ 9,745	$ —
Cash paid during the period for interest	$ —	$ —	$ 15,486
Cash paid during the period for income taxes	$ —	$ —	$ —

See accompanying notes to combined financial statements.

1. Description of the business

2seventy bio, Inc. (the “Company” or “2seventy bio”) is a cell and gene therapy company focused on the research, development, and commercialization of transformative treatments for cancer. The Company’s approach combines its expertise in T cell engineering technology and lentiviral vector gene delivery approaches, experience in research, development, and manufacturing of cell therapies and a suite of technologies that can be selectively deployed to develop highly innovative, targeted cellular therapies for patients with cancer. The Company is advancing multiple preclinical and clinical programs in oncology and, together with Bristol-Myers Squibb (“BMS”), delivering the first FDA-approved CAR T therapy in multiple myeloma, Abecma (idecabtagene vicleucel, or ide-cel), to patients in the United States. Please refer to Note 8, *Collaborative arrangements*, for further discussion of the collaboration with BMS.

The separation

In January 2021, bluebird bio, Inc. ("bluebird bio") announced its plans to separate its oncology portfolio and programs from its severe genetic disease, or SGD, portfolio and programs through a pro rata distribution of 2seventy bio's common stock to stockholders of bluebird bio. As a part of the separation, bluebird bio intends to transfer the assets, liabilities and operations of its oncology portfolio and programs to 2seventy bio, pursuant to the terms of a separation agreement, to be entered into between 2seventy bio and bluebird bio. On the distribution date, each bluebird bio stockholder will receive a pro rata share of 2seventy bio's common stock for every share of bluebird bio common stock held of record at the close of business on the record date for the distribution. Registered stockholders will receive cash in lieu of any fractional shares of 2seventy bio's common stock that they would have received as a result of the application of the distribution ratio. Following the distribution, 2seventy bio will operate as a separate, independent, publicly traded company. The distribution of 2seventy bio's common stock is subject to the satisfaction or waiver by bluebird bio of certain conditions.

Going concern

In accordance with Accounting Standards Codification (“ASC”) 205-40, *Going Concern*, the Company evaluated whether there are conditions and events, considered in the aggregate, that raise substantial doubt about its ability to continue as a going concern within one year after the date that the combined financial statements are issued. The Company has incurred losses and has experienced negative operating cash flows for all historical periods presented. During the year ended December 31, 2020, the Company incurred a loss of $120.1 million and used $67.8 million of cash in operations. The Company expects to continue to generate operating losses and negative operating cash flows for the next few years. The Company's continued operations are dependent on its ability to raise additional funding. The Company expects to finance its cash needs through a cash contribution from bluebird bio in connection with separation as well as through a combination of public or private equity offerings, debt financings, collaborations, strategic alliances or licensing arrangements with third parties. However, there can be no assurance that such financing will be available in sufficient amounts or on acceptable terms, if at all. If the Company is unable to obtain additional funding on a timely basis, it may be forced to significantly curtail, delay, or discontinue one or more of its planned research or development programs or be unable to expand its operations. Based on its recurring losses from operations, expectation of continuing operating losses for the next few years, and the need to raise additional funding to finance its future operations, as of May 11, 2021, the issuance date of the combined financial statements for the year ended December 31, 2020, the Company has concluded that there is substantial doubt about its ability to continue as a going concern for a period of one year from the date that these combined financial statements are issued. The accompanying financial statements do not include any adjustments that might result from the outcome of this uncertainty.

2. Summary of significant accounting policies and basis of presentation

Basis of presentation

The accompanying combined financial statements have been prepared on a carve-out basis and are derived from bluebird bio's consolidated financial statements and accounting records. The accompanying combined financial statements reflect the historical results of the operations, financial position and cash flows of the Company and have been prepared by the Company in accordance with accounting principles generally accepted in the United States ("GAAP"). Any reference in these notes to applicable guidance is meant to refer to the authoritative United States GAAP as included in the Accounting Standards Codification ("ASC") and Accounting Standards Updates ("ASUs") of the Financial Accounting Standards Board ("FASB").

The historical results of operations, financial position and cash flows of 2seventy bio presented in these combined financial statements may not be indicative of what they would have been had 2seventy bio been an independent stand-alone entity, nor are they necessarily indicative of 2seventy bio's future results of operations, financial position and cash flows.

As part of bluebird bio, the Company was dependent upon bluebird bio for all of its working capital and financing requirements, as bluebird bio uses a centralized approach to cash management and financing its operations. There were no cash amounts specifically attributable to the Company for the historical periods presented; therefore, cash and cash equivalents have not been allocated to the Company in the combined financial statements. Financing transactions related to bluebird bio are accounted for as a component of net parent investment in the combined balance sheets and as a financing activity on the accompanying combined statements of cash flows.

The Company's combined financial statements include an allocation of expenses related to certain bluebird bio corporate functions, including senior management, legal, human resources, finance and information technology. In addition, the Company's combined financial statements include an allocation of certain research and development costs not directly attributable to individual programs. These expenses have been allocated to the Company based on direct usage or benefit where specifically identifiable, with the remainder allocated based on employee time spent on projects, square footage or other measures that management believes are consistent and reasonable. These allocations may not be indicative of the actual expense that would have been incurred had the Company operated as an independent, publicly traded company for the periods presented. See Note 12, *Related-party transactions*, for a further description of the accounting for the separation from bluebird bio.

The combined balance sheets of the Company include assets and liabilities that were allocated principally on a specific identification basis. As 2seventy bio's operations were not historically held by a single legal entity or separate legal entities, net parent investment is shown in lieu of stockholder's equity in the combined financial statements. Net parent investment represents the cumulative investment by bluebird bio in the Company through the dates presented, inclusive of operating results. Balances between the Company and bluebird bio that were not historically settled in cash are included in net parent investment. All significant transactions between the Company and bluebird bio have been included in the accompanying combined financial statements. Transactions with bluebird bio are reflected in the accompanying combined statements of equity as net transfers from parent and in the accompanying combined balance sheets within net parent investment.

Amounts reported are computed based on thousands, except percentages or as otherwise noted. As a result, certain totals may not sum due to rounding.

Principles of combination

The accompanying combined financial statements include the attribution of certain assets and liabilities that have historically been held by bluebird bio but which are specifically identifiable or attributable to the Company. All intercompany balances and transactions with bluebird bio are deemed to be effectively settled in the combined financial statements at the time the transaction is recorded. Expenses related to corporate allocations from bluebird bio to the Company are considered to be effectively settled for cash in the combined financial statements at the time the transaction is recorded.

The Company continually assesses whether it is the primary beneficiary of a variable interest entity as changes to existing relationships or future transactions may result in consolidation or deconsolidation of one or more collaborators or partners. In determining whether it is the primary beneficiary of an entity in which the Company has a variable interest, management applies a qualitative approach that determines whether the Company has both (1) the power to direct the economically significant activities of the entity and (2) the obligation to absorb losses of, or the right to receive benefits from, the entity that could potentially be significant to that entity.

Use of estimates

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts in the financial statements and accompanying notes. Actual results could materially differ from those estimates. Management considers many factors in selecting appropriate financial accounting policies and controls, and in developing the estimates and assumptions that are used in the preparation of these financial statements. Management must apply significant judgment in this process. In addition, other factors may affect estimates, including: expected business and operational changes, sensitivity and volatility associated with the assumptions used in developing estimates, and whether historical trends are expected to be representative of future trends. The estimation process often may yield a range of potentially reasonable estimates of the ultimate future outcomes and management must select an amount that falls within that range of reasonable estimates. This process may result in actual results differing materially from those estimated amounts used in the preparation of the financial statements.

Estimates and judgments are used in the following areas, among others: allocations of revenue, expenses, assets and liabilities from bluebird bio's historical consolidated financial statements to the Company, future undiscounted cash flows and subsequent fair value estimates used to assess potential and measure any impairment of long-lived assets, including goodwill and intangible assets, the measurement of right-of-use assets and lease liabilities, contingent consideration, stock-based compensation expense, accrued expenses, income taxes, and the assessment of the Company's ability to fund its operations for at least the next twelve months from the date of issuance of these financial statements. In addition, estimates and judgments are used in the Company’s accounting for its revenue-generating arrangements, in particular as it relates to determining the stand-alone selling price of performance obligations, evaluating whether an option to acquire additional goods and services represents a material right, estimating the total transaction price, including estimating variable consideration and the probability of achieving future potential development and regulatory milestones, assessing the period of performance over which revenue may be recognized, and accounting for modifications to revenue-generating arrangements.

Cash and cash equivalents

The Company considers all highly liquid investments purchased with original final maturities of 90 days or less from the date of purchase to be cash equivalents. Cash equivalents may consist of marketable securities with maturities of less than 90 days when purchased. Cash equivalents are reported at fair value. There were no cash or cash equivalents specifically attributable to 2seventy bio for the historical periods presented; therefore, there are no cash or cash equivalents reflected in the combined financial statements.

Segment information

The Company operates in a single segment, focusing on researching, developing and commercializing potentially transformative treatments for cancer. Consistent with its operational structure, its chief operating decision maker manages and allocates resources for the Company at a combined level. Therefore, results of the Company's operations are reported on a combined basis for purposes of segment reporting. All material long-lived assets of the Company reside in the United States.

Fair value of financial instruments

The Company has certain financial liabilities recorded at fair value which have been classified as Level 1, 2 or 3 within the fair value hierarchy as described in the accounting standards for fair value measurements:

Level 1—Fair values are determined utilizing quoted prices (unadjusted) in active markets for identical assets or liabilities that the Company has the ability to access at the measurement date.

Level 2—Fair values are determined utilizing quoted prices for identical or similar assets or liabilities in active markets or other market observable inputs such as interest rates, yield curves and foreign currency spot rates.

Level 3—Prices or valuations that require inputs that are both significant to the fair value measurement and unobservable.

To the extent that valuation is based on models or inputs that are less observable or unobservable in the market, the determination of fair value requires more judgment. Accordingly, the degree of judgment exercised by the Company in determining fair value is greatest for instruments categorized in Level 3. A financial instrument's level within the fair value hierarchy is based on the lowest level of any input that is significant to the fair value measurement.

Items measured at fair value on a recurring basis relate to contingent consideration liabilities (see Note 3, *Fair value measurements*). The carrying amounts of accounts payable and accrued expenses approximate their fair values due to their short-term nature.

Business combinations

Business combinations are accounted for using the acquisition method of accounting. Using this method, the tangible and intangible assets acquired and the liabilities assumed are recorded as of the acquisition date at their respective fair values. The Company evaluates a business as an integrated set of activities and assets that is capable of being managed for the purpose of providing a return in the form of dividends, lower costs or other economic benefits and consists of inputs and processes that provide or have the ability to provide outputs. In an acquisition of a business, the excess of the fair value of the consideration transferred over the fair value of the net assets acquired is recorded as goodwill. In an acquisition of net assets that does not constitute a business, no goodwill is recognized.

The combined financial statements include the results of operations of an acquired business after the completion of the acquisition.

Goodwill

Goodwill represents the excess of the purchase price over the fair value of the net assets acquired when accounted for using the acquisition method of accounting. Goodwill is not amortized; rather, it is evaluated for impairment within the Company's single reporting unit on an annual basis, during the fourth quarter, or more frequently if an event occurs or circumstances change that would more-likely-than-not reduce the fair value of the Company's reporting unit below its carrying amount. The Company adopted ASC 2017-04, *Intangibles—Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment* ("ASU 2017-04"), for purposes of performing its annual goodwill impairment test for 2019 during the fourth quarter of 2019. ASU 2017-04 removes the second step of the goodwill impairment test. Under this ASU, the Company performs a one-step quantitative test and records the amount of goodwill impairment, if any, as the excess of a reporting unit's carrying amount over its fair value, not to exceed the total amount of goodwill allocated to the reporting unit. The Company has not recognized any impairment charges related to goodwill to date.

Intangible assets, net

Intangible assets, net consist of acquired core technology, net of accumulated amortization. The Company amortizes its intangible assets using the straight-line method over their estimated economic lives and periodically reviews for impairment. The Company has not recognized any impairment charges related to intangible assets to date.

Contingent consideration

Each reporting period, the Company remeasures the contingent consideration obligations associated with business combinations to their fair value and records within operating expenses increases or decreases in their fair value as change in fair value of contingent consideration within the combined statements of operations and comprehensive loss. Changes in contingent consideration result from changes in the assumptions regarding probabilities of successful achievement of related milestones, the estimated timing in which the milestones may be achieved, and the discount rate used to estimate the fair value of the liability. Contingent consideration may change significantly as development of the Company's programs in certain indications progress and additional data is obtained, impacting the Company's assumptions. The assumptions used in estimating fair value require significant judgment. The use of different assumptions and judgments could result in a materially different estimate of fair value. See Note 3, *Fair value measurements*, for additional information.

Property, plant and equipment

Property, plant and equipment is stated at cost. Maintenance and repairs that do not improve or extend the lives of the respective assets are expensed to operations as incurred. Depreciation and amortization is calculated using the straight-line method over the estimated useful lives of the assets, which are as follows:

Asset	Estimated useful life
Building	40 years
Computer equipment and software	3 years
Furniture and fixtures	2-5 years
Laboratory equipment	2-5 years
Leasehold improvements	Shorter of the useful life or remaining lease term

Prior to the adoption of ASU 2016-02, *Leases (Topic 842)* ("ASU 2016-02" or "ASC 842"), on January 1, 2019 (discussed further below), the Company recorded certain construction costs incurred by a landlord on behalf of the Company related to a lease arrangement as a building asset and corresponding financing obligation on the consolidated balance sheets. See Note 6, *Leases*, for additional information.

Impairment of long-lived assets

The Company reviews long-lived assets when events or changes in circumstances indicate the carrying value of the assets may not be recoverable. Recoverability is measured by comparison of the book values of the assets to future net undiscounted cash flows that the assets are expected to generate. If such assets are considered to be impaired, the impairment to be recognized is measured by the amount by which the book value of the assets exceed their fair value, which is measured based on the projected discounted future net cash flows arising from the assets.

Leases

Effective January 1, 2019, the Company adopted ASC 842 using the required modified retrospective approach and utilizing the effective date as its date of initial application. As a result, amounts for the year ended December 31, 2018 are presented in accordance with the previous guidance in ASC 840, *Leases* ("ASC 840").

At the inception of an arrangement, the Company determines whether the arrangement is or contains a lease based on the relevant facts and circumstances present in the arrangement. Leases with a term greater than one year are recognized on the balance sheet as right-of-use assets and current and non-current lease liabilities, as applicable. The Company does not have material financing leases.

Operating lease liabilities and their corresponding right-of-use assets are initially recorded based on the present value of lease payments over the expected remaining lease term. Certain adjustments to the right-of-use asset may be required for items such as incentives received. The interest rate implicit in lease contracts is typically not readily determinable. As a result, the Company utilizes its incremental borrowing rate to discount lease payments, which reflects the rate at which the Company could borrow on a collateralized basis the amount of the lease payments in

the same currency, for a similar term, in a similar economic environment. To estimate its incremental borrowing rate, a credit rating applicable to the Company is estimated using a synthetic credit rating analysis since the Company does not currently have a rating agency-based credit rating.

The Company has elected not to recognize leases with an original term of one year or less on the balance sheet. The Company typically only includes an initial lease term in its assessment of a lease arrangement. Options to renew a lease are not included in the Company's assessment unless it is reasonably certain that the Company will exercise its renewal option.

Assumptions made by the Company at the commencement date are re-evaluated upon occurrence of certain events, including a lease modification. A lease modification results in a separate contract when the modification grants the lessee an additional right of use not included in the original lease and when lease payments increase commensurate with the stand-alone price for the additional right of use. When a lease modification results in a separate contract, it is accounted for in the same manner as a new lease.

ASC 842 transition practical expedients and application of transition provisions to leases at the transition date

The Company elected the following practical expedients, which must be elected as a package and applied consistently to all of its leases at the transition date (including those for which the entity is a lessee or a lessor): (i) the Company did not reassess whether any expired or existing contracts are or contain leases; (ii) the Company did not reassess the lease classification for any expired or existing leases (that is, all existing leases that were classified as operating leases in accordance with ASC 840 are classified as operating leases, and all existing leases that were classified as capital leases in accordance with ASC 840 are classified as finance leases); and (iii) the Company did not reassess initial direct costs for any existing leases.

For leases that existed prior to the date of initial application of ASC 842 (which were previously classified as operating leases), a lessee may elect to use either the total lease term measured at lease inception under ASC 840 or the remaining lease term as of the date of initial application of ASC 842 in determining the period for which to measure its incremental borrowing rate. In transition to ASC 842, the Company utilized the remaining lease term of its leases in determining the appropriate incremental borrowing rates.

Application of ASC 842 policy elections to leases post adoption

The Company has made certain policy elections to apply to its leases executed post adoption, or subsequent to January 1, 2019, as further described below.

In accordance with ASC 842, components of a lease should be separated into lease components and non-lease components. The fixed and in-substance fixed contract consideration must be allocated based on the relative stand-alone prices to the lease components and non-lease components.

Entities may elect not to separate lease and non-lease components. Rather, entities would account for each lease component and related non-lease component together as a single lease component. The Company has elected to account for lease and non-lease components together as a single lease component for all underlying assets and allocate all of the contract consideration to the lease component only.

ASC 842 allows for the use of judgment in determining whether the lease term is for a major part of the remaining economic life of the underlying asset and whether the present value of lease payments represents substantially all of the fair value of the underlying asset. The Company applies the bright line thresholds referenced in ASC 842-10-55-2 to assist in evaluating leases for appropriate classification. The aforementioned bright lines are applied consistently to the Company's entire portfolio of leases.

Revenue recognition

Under ASC Topic 606, *Revenue from Contracts with Customers* ("Topic 606"), an entity recognizes revenue when its customer obtains control of promised goods or services, in an amount that reflects the consideration that the entity expects to receive in exchange for those goods or services. To determine revenue recognition for arrangements that an entity determines are within the scope of Topic 606, the entity performs the following five

steps: (i) identify the contract(s) with a customer; (ii) identify the performance obligations in the contract; (iii) determine the transaction price, including variable consideration, if any; (iv) allocate the transaction price to the performance obligations in the contract; and (v) recognize revenue when (or as) the entity satisfies a performance obligation. The Company only applies the five-step model to contracts when it is probable that the entity will collect the consideration to which it is entitled in exchange for the goods or services it transfers to the customer.

Once a contract is determined to be within the scope of Topic 606, the Company assesses the goods or services promised within each contract and determines those that are performance obligations. Arrangements that include rights to additional goods or services that are exercisable at a customer's discretion are generally considered options. The Company assesses if these options provide a material right to the customer and if so, they are considered performance obligations. The identification of material rights requires judgments related to the determination of the value of the underlying good or service relative to the option exercise price. The exercise of a material right is accounted for as a contract modification for accounting purposes.

The Company assesses whether each promised good or service is distinct for the purpose of identifying the performance obligations in the contract. This assessment involves subjective determinations and requires management to make judgments about the individual promised goods or services and whether such are separable from the other aspects of the contractual relationship. Promised goods and services are considered distinct provided that: (i) the customer can benefit from the good or service either on its own or together with other resources that are readily available to the customer (that is, the good or service is capable of being distinct) and (ii) the entity's promise to transfer the good or service to the customer is separately identifiable from other promises in the contract (that is, the promise to transfer the good or service is distinct within the context of the contract). In assessing whether a promised good or service is distinct, the Company considers factors such as the research, manufacturing and commercialization capabilities of the collaboration partner and the availability of the associated expertise in the general marketplace. The Company also considers the intended benefit of the contract in assessing whether a promised good or service is separately identifiable from other promises in the contract. If a promised good or service is not distinct, an entity is required to combine that good or service with other promised goods or services until it identifies a bundle of goods or services that is distinct.

The transaction price is then determined and allocated to the identified performance obligations in proportion to their stand-alone selling prices ("SSP") on a relative SSP basis. SSP is determined at contract inception and is not updated to reflect changes between contract inception and when the performance obligations are satisfied. Determining the SSP for performance obligations requires significant judgment. In developing the SSP for a performance obligation, the Company considers applicable market conditions and relevant entity-specific factors, including factors that were contemplated in negotiating the agreement with the customer and estimated costs. The Company validates the SSP for performance obligations by evaluating whether changes in the key assumptions used to determine the SSP will have a significant effect on the allocation of arrangement consideration between multiple performance obligations.

If the consideration promised in a contract includes a variable amount, the Company estimates the amount of consideration to which it will be entitled in exchange for transferring the promised goods or services to a customer. The Company determines the amount of variable consideration by using the expected value method or the most likely amount method. The Company includes the unconstrained amount of estimated variable consideration in the transaction price. The amount included in the transaction price is constrained to the amount for which it is probable that a significant reversal of cumulative revenue recognized will not occur. At the end of each subsequent reporting period, the Company re-evaluates the estimated variable consideration included in the transaction price and any related constraint, and if necessary, adjusts its estimate of the overall transaction price. Any such adjustments are recorded on a cumulative catch-up basis in the period of adjustment.

If an arrangement includes development and regulatory milestone payments, the Company evaluates whether the milestones are considered probable of being reached and estimates the amount to be included in the transaction price using the most likely amount method. If it is probable that a significant revenue reversal would not occur, the associated milestone value is included in the transaction price. Milestone payments that are not within the Company's control or the licensee's control, such as regulatory approvals, are generally not considered probable of being achieved until those approvals are received.

For arrangements with licenses of intellectual property that include sales-based royalties, including milestone payments based on the level of sales, and the license is deemed to be the predominant item to which the royalties relate, the Company recognizes royalty revenue and sales-based milestones at the later of (i) when the related sales occur, or (ii) when the performance obligation to which the royalty has been allocated has been satisfied.

In determining the transaction price, the Company adjusts consideration for the effects of the time value of money if the timing of payments provides the Company with a significant benefit of financing. The Company does not assess whether a contract has a significant financing component if the expectation at contract inception is such that the period between payment by the licensees and the transfer of the promised goods or services to the licensees will be one year or less. The Company assessed each of its revenue generating arrangements in order to determine whether a significant financing component exists and concluded that a significant financing component does not exist in any of its arrangements.

The Company then recognizes as revenue the amount of the transaction price that is allocated to the respective performance obligation when (or as) each performance obligation is satisfied, either at a point in time or over time, and if over time recognition is based on the use of an output or input method.

The Company recognizes revenue within the following financial statement captions:

Service revenue

To date, the Company's service revenue has primarily been generated from the elements of its collaboration arrangement with BMS that are accounted for pursuant to Topic 606, using the five-step model described above. As discussed further below, the Company analyzes its collaboration arrangements to assess whether they are within the scope of ASC 808, *Collaborative Arrangements* ("ASC 808") or Topic 606. For the elements of a collaboration arrangement which are more reflective of a vendor-customer relationship and therefore within the scope of Topic 606, the Company records the related revenue as service revenue on the combined statement of operations and comprehensive loss. Refer below for additional discussion around the Company's policy for recognizing collaborative arrangement revenue and the determination of whether elements of a collaboration arrangement are within the scope of ASC 808 or Topic 606.

Collaborative arrangement revenue

To date, the Company's collaborative arrangement revenue has been generated from its collaboration arrangements with BMS and Regeneron Pharmaceuticals, Inc. ("Regeneron"), as further described in Note 8, *Collaborative arrangements.*

The Company analyzes its collaboration arrangements to assess whether they are within the scope of ASC 808, which includes determining whether such arrangements involve joint operating activities performed by parties that are both active participants in the activities and exposed to significant risks and rewards dependent on the commercial success of such activities. This assessment is performed throughout the life of the arrangement based on changes in the responsibilities of all parties in the arrangement. For collaboration arrangements within the scope of ASC 808 that contain multiple elements, the Company first determines which elements of the collaboration are deemed to be within the scope of ASC 808 and those that are more reflective of a vendor-customer relationship and therefore within the scope of Topic 606 (refer above for further discussion of the Company's policy for recognizing service revenue). For elements of collaboration arrangements that are accounted for pursuant to ASC 808, an appropriate recognition method is determined and applied consistently, generally by analogy to Topic 606. Amounts that are owed to collaboration partners are recognized as an offset to collaborative arrangement revenues as such amounts are incurred by the collaboration partner. Where amounts owed to a collaboration partner exceed the Company's collaborative arrangement revenues in each quarterly period, such amounts are classified as research and development expense.

As the Company recognizes revenue under its collaborative arrangements both within and outside the scope of Topic 606, the Company presents revenue on its combined statements of operations and comprehensive loss as follows: service revenue includes revenue from collaborative partners recognized within the scope of Topic 606 and

collaborative arrangement revenue includes revenue from collaborative partners recognized outside the scope of Topic 606.

Royalty and other revenue

The Company enters into out-licensing agreements that are within the scope of Topic 606. The Company does not have any material license arrangements that contain more than one performance obligation. The terms of such out-license agreements include the license of functional intellectual property, given the functionality of the intellectual property is not expected to change substantially as a result of the licensor's ongoing activities, and typically include payment of one or more of the following: non-refundable up-front license fees; development and regulatory milestone payments and milestone payments based on the level of sales; and royalties on net sales of licensed products. Nonrefundable up-front license fees are recognized as revenue at a point in time when the licensed intellectual property is made available for the customer's use and benefit, which is generally at the inception of the arrangement. Development and regulatory milestone fees, which are a type of variable consideration, are recognized as revenue to the extent that it is probable that a significant reversal will not occur. The Company recognizes royalty revenue and sales-based milestones at the later of (i) when the related sales occur, or (ii) when the performance obligation to which the royalty has been allocated has been satisfied.

For a complete discussion of accounting for collaboration and other revenue-generating arrangements, see Note 8, *Collaborative arrangements*, and Note 9, *Royalty and other revenue.*

Research and development expenses

Research and development costs are charged to expense as costs are incurred in performing research and development activities, including salaries and benefits, facilities costs, overhead costs, clinical study and related clinical manufacturing costs, license and milestone fees, contract services, manufacturing costs for pre-launch inventory that did not qualify for capitalization, and other related costs. Up-front fees and milestones paid to third parties in connection with technologies that have not reached technological feasibility and do not have an alternative future use are expensed as research and development expense as incurred. In circumstances where amounts have been paid in excess of costs incurred, the Company records a prepaid expense. The Company accrues costs for clinical trial activities based upon estimates of the services received and related expenses incurred that have yet to be invoiced by the contract research organizations, clinical study sites, laboratories, consultants, or other clinical trial vendors that perform the activities. Where amounts owed to a collaboration partner exceed the Company's collaborative arrangement revenues in each quarterly period, such amounts are classified as research and development expense.

Cost of royalty and other revenue

Cost of royalty and other revenue represents expense associated with amounts owed to third parties as a result of revenue recognized under the Company's out-license arrangements.

Interest expense

Interest expense was $0.0 million, $0.0 million, and $15.5 million for the years ended December 31, 2020, 2019, and 2018, respectively. Please refer to Note 6, *Leases,* for further discussion of interest expense incurred on the 60 Binney Street lease.

Other income, net

Other income, net consists primarily of income resulting from the allocation of facility-related, depreciation and amortization expense to bluebird bio for its proportional use of assets that will be attributed to the Company as well as expense resulting from the allocation of facility-related, depreciation and amortization expense to the Company for its proportional use of bluebird bio assets that will not be attributed to the Company. Other income, net also includes immaterial gains and losses on disposal of assets.

Income taxes

Income taxes as presented in the combined financial statements of 2seventy bio attribute current and deferred income taxes of bluebird bio to 2seventy bio's stand-alone financial statements in a manner that is systematic, rational and consistent with the asset and liability method prescribed by FASB ASC Topic 740: *Income Taxes* ("ASC 740"). Accordingly, 2seventy bio's income tax provision was prepared following the separate return method. The separate return method applies ASC 740 to the stand-alone financial statements of each member of the consolidated group as if each group member was a separate taxpayer and a stand-alone enterprise. The calculation of the Company's income taxes on a separate return basis requires a considerable amount of judgment and use of both estimates and allocations. As a result, actual transactions included in the consolidated financial statements of bluebird bio may not be included in the separate combined financial statements of 2seventy bio. Similarly, the tax treatment of certain items reflected in the combined financial statements of 2seventy bio may not be reflected in the consolidated financial statements and tax returns of bluebird bio. Therefore, items such as net operating losses, credit carryforwards and valuation allowances may exist in the Company's stand-alone financial statements that may or may not exist in bluebird bio's consolidated financial statements. As such, the income taxes of 2seventy bio as presented in the combined financial statements may not be indicative of the income taxes that 2seventy bio will generate in the future.

The Company recognizes deferred tax assets and liabilities for the expected future tax consequences of events that have been included in the financial statements or tax returns. Deferred tax assets and liabilities are determined based on the difference between the financial statement and tax bases of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to reverse. Valuation allowances are provided, if based upon the weight of available evidence, it is more likely than not that some or all of the deferred tax assets will not be realized.

The Company accounts for uncertain tax positions in accordance with the provisions of ASC 740. When uncertain tax positions exist, the Company recognizes the tax benefit of tax positions to the extent that the benefit will more likely than not be realized. The determination as to whether the tax benefit will more likely than not be realized is based upon the technical merits of the tax position as well as consideration of the available facts and circumstances. The Company accrues for potential interest and penalties related to unrecognized tax benefits in income tax expense.

In general, the taxable income (loss) of bluebird bio entities was included in bluebird bio's consolidated tax returns. As such, separate income tax returns were not prepared for the entities included within the combined financial statements. Consequently, income taxes currently payable by 2seventy bio are deemed to have been remitted to bluebird bio, in cash, in the period in which the liability arose, and income taxes currently receivable by 2seventy bio are deemed to have been received from bluebird bio in the period in which the receivable arose.

Comprehensive loss

Comprehensive loss is composed of net loss and other comprehensive income (loss). There was no difference between net loss and comprehensive loss for each of the periods presented in the combined financial statements.

Recent accounting pronouncements

ASU No. 2016-13, Financial Instruments – Credit Losses (Topic 326): Measurement of Credit Losses on Financial Statements, ASU No. 2019-5 Financial Instruments – Credit Losses (Topic 326): Targeted Transition Relief, ASU No. 2019-11, Codification Improvements to Topic 326, Financial Instruments - Credit Losses

In June 2016, the FASB issued ASU 2016-13, *Financial Instruments – Credit Losses (Topic 326): Measurement of Credit Losses on Financial Statements*. The new standard, as amended, requires that expected credit losses relating to financial assets measured on an amortized cost basis and available-for-sale debt securities be recorded through an allowance for credit losses. It also limits the amount of credit losses to be recognized for available-for-sale debt securities to the amount by which carrying value exceeds fair value and also requires the reversal of previously recognized credit losses if fair value increases. The targeted transition relief standard allows filers an option to irrevocably elect the fair value option of ASC 825-10, *Financial Instruments-Overall*, applied on

an instrument-by-instrument basis for eligible instruments. The Company adopted this standard on January 1, 2020 on a prospective basis and the adoption did not have a material impact on its financial position and results of operations.

ASU No. 2018-13, Fair Value Measurement (Topic 820): Disclosure Framework – Changes to the Disclosure Requirements for Fair Value Measurement

In August 2018, the FASB issued ASU 2018-13, *Fair Value Measurement (Topic 820): Disclosure Framework – Changes to the Disclosure Requirements for Fair Value Measurement*. The new standard removes certain disclosures, modifies certain disclosures, and adds additional disclosures related to fair value measurement. The Company adopted this standard as of January 1, 2020, and it did not have a material impact on its financial position and results of operations upon adoption.

ASU No. 2018-15, Intangibles-Goodwill and Other - Internal-Use Software (Subtopic 350-40): Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract

In August 2018, the FASB issued ASU 2018-15, *Intangibles-Goodwill and Other-Internal-Use Software (Subtopic 350-40): Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract.* The amendments in this update align the requirements for capitalizing implementation costs incurred in a hosting arrangement that is a service contract with the requirements for capitalizing implementation costs incurred to develop or obtain internal-use software (and hosting arrangements that include an internal-use software license). The accounting for the service element of a hosting arrangement that is a service contract is not affected by the amendments in this update. The Company adopted this standard on a prospective basis as of January 1, 2020, and it did not have a material impact on its financial position and results of operations upon adoption.

ASU No. 2018-18, Collaborative Arrangements (Topic 808): Clarifying the Interaction between Topic 808 and Topic 606

In November 2018, the FASB issued ASU 2018-18, *Collaborative Arrangements (Topic 808): Clarifying the Interaction between Topic 808 and Topic 606*, ("ASU 2018-18"). The amendments in this update clarify that certain transactions between collaborative arrangement participants should be accounted for as revenue under ASC 606, *Revenue from Contracts with Customers* ("Topic 606" or "ASC 606") when the counter party is a customer in the context of a separate unit of account for the arrangement. ASU 2018-18 also precludes companies from presenting transactions with collaborative partners that are outside the scope of Topic 606 together with revenue within the scope of Topic 606. The Company adopted this standard on a retrospective basis on January 1, 2020. As a result, revenue for prior periods is presented in accordance with the new standard.

As the Company recognizes revenue under its collaborative arrangements both within and outside the scope of Topic 606, the Company presents revenue on its combined statements of operations and comprehensive loss as follows: service revenue includes revenue from collaborative partners recognized within the scope of Topic 606 and collaborative arrangement revenue includes revenue from collaborative partners recognized outside the scope of Topic 606.

ASU No. 2019-4, Codification Improvements to Topic 326, Financial Instruments – Credit Losses, Topic 815, Derivatives and Hedging, and Topic 825, Financial Instruments

In April 2019, the FASB issued ASU 2019-4, *Codification Improvements to Topic 326, Financial Instruments – Credit Losses, Topic 815, Derivatives and Hedging, and Topic 825, Financial Instruments.* This update provides clarifications for three topics related to financial instruments accounting, some of which apply to the Company. The Company adopted this standard as of January 1, 2020 on a prospective basis, and it did not have a material impact on its financial position and results of operations upon adoption.

Not yet adopted

ASU No. 2019-12, Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes

In December 2019, the FASB issued ASU 2019-12, *Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes* (“ASU 2019-12”), which is intended to simplify the accounting for income taxes. ASU 2019-12 removes certain exceptions to the general principles in Topic 740 and also clarifies and amends existing guidance to improve consistent application. The new standard will be effective beginning January 1, 2021. The adoption of ASU 2019-12 is not expected to have a material impact on the Company's financial position or results of operations upon adoption.

ASU No. 2020-06, Debt—Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging—Contracts in Entity's Own Equity (Subtopic 815-40): Accounting for Convertible Instruments and Contracts in an Entity's Own Equity

In August 2020, the FASB issued ASU 2020-06, *Debt—Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging—Contracts in Entity's Own Equity (Subtopic 815-40): Accounting for Convertible Instruments and Contracts in an Entity's Own Equity* (“ASU 2020-06”). ASU 2020-06 simplifies the complexity associated with applying U.S. GAAP for certain financial instruments with characteristics of liabilities and equity. More specifically, the amendments focus on the guidance for convertible instruments and derivative scope exception for contracts in an entity's own equity. The Company will early adopt the new standard, effective January 1, 2021. The adoption of ASU 2020-06 is not expected to have an impact on the Company's financial position or results of operations upon adoption.

ASU No. 2020-08, Codification Improvements to Subtopic 310-20, Receivables - Nonrefundable Fees and Other Costs

In October 2020, the FASB issued ASU 2020-08, *Codification Improvements to Subtopic 310-20, Receivables - Nonrefundable Fees and Other Costs* (“ASU 2020-08”) to provide further clarification and update the previously issued guidance in ASU 2017-08, *Receivables - Nonrefundable Fees and Other Costs (Subtopic 310-20: Premium Amortization on Purchased Callable Debt Securities)* (“ASU 2017-08”). ASU 2017-08 shortened the amortization period for certain callable debt securities purchased at a premium by requiring that the premium be amortized to the earliest call date. ASU 2020-08 requires that at each reporting period, to the extent that the amortized cost of an individual callable debt security exceeds the amount repayable by the issuer at the next call date, the excess premium shall be amortized to the next call date. The new standard will be effective beginning January 1, 2021. The adoption of ASU 2020-08 is not expected to have a material impact on the Company's financial position or results of operations upon adoption.

ASU No. 2020-10, Codification Improvements

In October 2020, the FASB issued ASU 2020-10, *Codification Improvements* ("ASU 2020-10"). The amendments in this ASU represent changes to clarify the ASC, correct unintended application of the guidance, or make minor improvements to the ASC that are not expected to have a significant effect on current accounting practice or create a significant administrative cost to most entities. This new standard will be effective beginning January 1, 2021. The adoption of ASU 2020-10 is not expected to have a material impact on the Company's financial position or results of operations upon adoption.

3. Fair value measurements

The following table sets forth the Company's assets and liabilities that are measured at fair value on a recurring basis as of December 31, 2020 and 2019 (in thousands):

	Total	Quoted prices in active markets (Level 1)	Significant other observable inputs (Level 2)	Significant unobservable inputs (Level 3)
December 31, 2020				
Liabilities:				
Contingent consideration	$ 1,509	$ —	$ —	$ 1,509
Total liabilities	$ 1,509	$ —	$ —	$ 1,509
December 31, 2019				
Liabilities:				
Contingent consideration	$ 7,977	$ —	$ —	$ 7,977
Total liabilities	$ 7,977	$ —	$ —	$ 7,977

As of December 31, 2020 and 2019, the Company did not have any assets that are measured at fair value on a recurring basis.

Contingent consideration

In connection with bluebird bio's prior acquisition of Precision Genome Engineering, Inc. ("Pregenen"), the Company may be required to pay future consideration that is contingent upon the achievement of specified development, regulatory approvals or sales-based milestone events. Contingent consideration is measured at fair value and is based on significant unobservable inputs, which represents a Level 3 measurement within the fair value hierarchy. The valuation of contingent consideration uses assumptions the Company believes would be made by a market participant. The Company assesses these estimates on an on-going basis as additional data impacting the assumptions is obtained. Future changes in the fair value of contingent consideration related to updated assumptions and estimates are recognized within the combined statements of operations and comprehensive loss. In the absence of new information related to the probability of milestone achievement, changes in fair value will reflect changing discount rates and the passage of time. Contingent consideration is included in other non-current liabilities on the combined balance sheets.

The table below provides a roll-forward of fair value of the Company's contingent consideration obligations that include Level 3 inputs (in thousands):

	Year ended December 31,	
	2020	2019
Beginning balance	$ 7,977	$ 5,230
Additions	—	—
Changes in fair value	(6,468)	2,747
Payments	—	—
Ending balance	$ 1,509	$ 7,977

Please refer to Note 7, *Commitments and contingencies*, for further information.

4. Property, plant and equipment, net

Property, plant and equipment, net, consists of the following (in thousands):

	As of December 31,	
	2020	2019
Land	$ 1,210	$ 1,210
Building	15,745	15,664
Computer equipment and software	6,503	6,485
Office equipment	6,588	6,570
Laboratory equipment	24,080	19,381
Leasehold improvements	28,305	28,153
Construction-in-progress	91,631	75,543
Total property, plant and equipment	174,062	153,006
Less accumulated depreciation and amortization	(30,037)	(20,716)
Property, plant and equipment, net	$ 144,025	$ 132,290

Depreciation and amortization expense related to property, plant and equipment was $9.4 million, $8.8 million, and $9.6 million for the years ended December 31, 2020, 2019, and 2018, respectively.

North Carolina manufacturing facility

In November 2017, bluebird bio acquired a manufacturing facility in Durham, North Carolina for the future manufacture of lentiviral vectors for the Company’s gene therapies. This manufacturing facility is fully dedicated to the Company's operations and, accordingly, will be attributed to the Company in connection with the separation. As of December 31, 2020, a portion of the facility has been placed into service and the remainder of the facility is still in process of construction and qualification, which is required for the facility to be ready for its intended use. Construction-in-progress as of December 31, 2020 and 2019, includes $91.1 million and $74.2 million, respectively, related to the North Carolina manufacturing facility. The Company expects the majority of the facility to be placed into service in 2021.

5. Accrued expenses and other current liabilities

Accrued expenses and other current liabilities consist of the following (in thousands):

	As of December 31,	
	2020	2019
Employee compensation	$ 9,451	$ 4,903
Manufacturing costs	6,808	15,981
Clinical and contract research organization costs	2,854	1,141
Collaboration research costs	19,605	25,538
Property, plant, and equipment	440	1,470
License and milestone fees	278	275
Other	3,911	3,529
Total accrued expenses and other current liabilities	$ 43,347	$ 52,837

6. Leases

bluebird bio leases certain office and laboratory space that will be attributed to the Company in connection with the separation.

60 Binney Street lease

In September, 2015, bluebird bio entered into a lease agreement, which will be attributed to the Company and is the Company's corporate headquarters, for office and laboratory space located in a building (the "Building") at 60 Binney Street, Cambridge, Massachusetts (the "60 Binney Street Lease"). Under the terms of the 60 Binney Street Lease, starting on October 1, 2016, the Company leases approximately 253,108 square feet of office and laboratory space at $72.50 per square foot per year, or $18.4 million per year in base rent, which is subject to scheduled annual rent increases of 1.75% plus certain operating expenses and taxes. bluebird bio currently maintains a $13.8 million collateralized letter of credit and, subject to the terms of the lease and certain reduction requirements specified therein, including market capitalization requirements, this amount may decrease to $9.2 million over time. As the Company did not have legal ownership over any bank accounts, there were no cash and cash equivalents balances specifically attributable to the Company for the historical periods presented and, accordingly, no restricted cash is reflected in the combined financial statements related to the letter of credit. Pursuant to a work letter entered into in connection with the 60 Binney Street Lease, the landlord contributed an aggregate of $42.4 million toward the cost of construction and tenant improvements for the Building.

The 60 Binney Street Lease term will continue until March 31, 2027. The Company has the option to extend the 60 Binney Street Lease for two successive five-year terms.

Beginning in 2015 through construction completion in 2017, the Company recorded certain construction costs incurred and reported to it by the landlord for the 60 Binney Street Lease as an asset and corresponding construction financing lease obligation because bluebird bio was deemed to be the owner of the building during the construction period for accounting purposes. The Company evaluated the 60 Binney Street Lease upon occupancy on March 27, 2017 and determined that the 60 Binney Street Lease did not meet the criteria for "sale-leaseback" treatment under ASC 840. This determination was based on, among other things, bluebird bio's continuing involvement with the property in the form of non-recourse financing to the lessor. Accordingly, upon occupancy, the Company commenced depreciating the portion of the building in service over a useful life of 40 years and incurred interest expense related to the financing obligation.

In applying the ASC 842 transition guidance, the Company classified this lease as an operating lease and recorded a right-of-use asset and lease liability on the effective date. The Company is recognizing rent expense on a straight-line basis throughout the remaining term of the lease.

Seattle, Washington leases

In July 2018, bluebird bio entered into a lease agreement for office and laboratory space located in a portion of a building in Seattle, Washington, and moved into the facility in June 2019. This lease will be attributed to the Company in connection with the separation. The lease was amended in October 2018 to increase the total rentable space to approximately 36,126 square feet at $54.00 per square foot in base rent per year, which is subject to scheduled annual rent increases of 2.5% plus certain operating expenses and taxes. The lease commenced on January 1, 2019 and the lease term will continue through January 31, 2027. The Company determined the classification of this lease to be an operating lease and recorded a right-of-use asset and lease liability at lease commencement.

In September 2019, bluebird bio entered into a second amendment to the lease (the "Second Amendment"). The Second Amendment added approximately 22,188 square feet to the existing space and extended the lease term of the entire premises by 16 months, or until April 2028. Fixed monthly rent for the expanded space will be incurred at a rate of $62.80 per square foot per year beginning in January 2021, subject to annual increases of 2.5%. The Second Amendment includes a five-year option to extend the term.

Upon the execution of the Second Amendment, which was deemed to be a lease modification, the Company re-evaluated the assumptions made at the original lease commencement date. The Company determined the Second

Amendment consists of two separate contracts under ASC 842. One contract is related to a new right-of-use for the expanded 22,188 square feet of space, which is to be accounted for as a new lease, and the other is related to the modification of term for the original 36,126 square feet of space. The Company recorded an additional right-of-use asset and lease liability upon lease commencement of the expanded space. In September 2020, bluebird bio entered into a sublease agreement for the 22,188 square feet added under the Second Amendment at a fixed monthly rent of $62.80 per square foot per year beginning in January 2021, subject to annual increases of 2.5%. The sublease term will continue through April 2028. The Company is recognizing rent expense on a straight-line basis through the remaining extended term of the respective leases. The head lease and the sublease will be accounted for as two separate contracts with the income from the sublease presented separately from the lease expense on the head lease.

Summary of all lease costs recognized under ASC 842

The following table contains a summary of the lease costs recognized under ASC 842 and other information pertaining to the Company's operating leases for the years ended December 31, 2020 and 2019 (in thousands):

	For the year ended December 31,	
	2020	**2019**
Lease cost [(1)]		
Operating lease cost	$ 22,454	$ 21,406
Total lease cost	$ 22,454	$ 21,406
Other information		
Operating cash flows used for operating leases	$ 19,632	$ 19,521
Weighted average remaining lease term	6.4 years	7.4 years
Weighted average discount rate	6.72	6.73

(1) Short-term lease costs and variable lease costs incurred by the Company for the twelve months ended December 31, 2020 and 2019 were immaterial.

Rent expense is calculated on a straight-line basis over the term of the lease. Rent expense recognized under all leases, including additional charges for utilities, parking, maintenance, and real estate taxes that are not included within lease costs in the table above, was $32.5 million, $30.6 million, and $9.2 million for the years ended December 31, 2020, 2019 and 2018, respectively. Note that the Company adopted ASC 842 effective January 1, 2019 using the required modified retrospective approach and utilizing the effective date as its date of initial application. Therefore, amounts pertaining to the year ended December 31, 2018 are presented under previous accounting guidance and are therefore not comparable to the amounts recorded during the years ended December 31, 2020 and 2019 under ASC 842.

As of December 31, 2020, future minimum commitments under ASC 842 under the Company's operating leases were as follows (in thousands):

Maturity of lease liabilities	As of December 31, 2020
2021	$ 23,293
2022	23,712
2023	24,149
2024	24,595
2025	25,039
2026 and thereafter	36,640
Total lease payments	157,428
Less: imputed interest	(29,825)
Total operating lease liabilities	$ 127,603

7. Commitments and contingencies

Lease commitments

bluebird bio leases certain office and laboratory space. Refer to Note 6, *Leases*, for further information on the terms of these lease agreements.

Contingent consideration related to business combinations

On June 30, 2014, bluebird bio acquired Pregenen. All assets and liabilities related to the Pregenen acquisition, including the resulting goodwill and contingent consideration, will be attributed to the Company in connection with the separation. The Company may be required to make up to an additional $120.0 million in remaining future contingent cash payments to the former equityholders of Pregenen upon the achievement of certain clinical and commercial milestones related to the Pregenen technology, of which $20.1 million relates to clinical milestones and $99.9 million relates to commercial milestones. In accordance with accounting guidance for business combinations, contingent consideration liabilities are required to be recognized on the combined balance sheets at fair value. Estimating the fair value of contingent consideration requires the use of significant assumptions primarily relating to probabilities of successful achievement of certain clinical and commercial milestones, the expected timing in which these milestones will be achieved and discount rates. The use of different assumptions could result in materially different estimates of fair value.

Other funding commitments

bluebird bio is party to various agreements, principally relating to licensed technology, certain of which will be attributed to the Company in connection with the separation, that require future payments relating to milestones that may be met in subsequent periods or royalties on future sales of specified products. Additionally, to the extent an agreement relating to licensed technology is not attributed to the Company, bluebird bio may enter into a sublicense with the Company, which may require future milestone and/or royalty payments. These agreements include the collaboration agreements entered into with BMS and Regeneron. Please refer to Note 8, *Collaborative arrangements*, for further information on the BMS and Regeneron agreements.

Based on the Company's development plans as of December 31, 2020, the Company may be obligated to make future development, regulatory and commercial milestone payments and royalty payments on future sales of specified products. Payments under these agreements generally become due and payable upon achievement of such milestones or sales. When the achievement of these milestones or sales has not occurred, such contingencies are not recorded in the Company's financial statements. As further discussed in Note 8, *Collaborative arrangements*, BMS assumed responsibility for amounts due to licensors as a result of any future ex-U.S. sales of Abecma and bb21217.

Additionally, bluebird bio is party to various contracts with contract research organizations and contract manufacturers that generally provide for termination on notice, with the exact amounts in the event of termination to be based on the timing of the termination and the terms of the agreement.

bluebird bio has various manufacturing development agreements that will be attributed to the Company to support clinical and commercial product needs. The following table presents non-cancelable contractual obligations arising from these arrangements:

Years ended December 31,	Purchase commitment
2021	$ 5,198
Total purchase commitments	$ 5,198

Litigation

From time to time, bluebird bio has been and the Company expects to be party to various claims and complaints arising in the ordinary course of business, including securities class action litigation. bluebird bio has entered into, and the Company expects to enter into standard indemnification agreements in the ordinary course of business. Pursuant to these agreements, bluebird bio indemnifies, holds harmless, and agrees to reimburse the indemnified party for losses suffered or incurred by the indemnified party, generally bluebird bio's business partners. Pursuant to the separation agreement, the Company expects to indemnify, hold harmless, and agree to reimburse bluebird bio for its indemnification obligations with respect to the Company's business partners, relating to the Company's business or arising out of the Company's activities, in the past or to be conducted in the future. The term of these indemnification agreements is generally perpetual any time after execution of the agreement. The maximum potential amount of future payments bluebird bio or the Company could be required to make under these indemnification agreements is unlimited. Management does not believe that any ultimate liability resulting from any of these claims will have a material adverse effect on its results of operations, financial position, or liquidity. However, management cannot give any assurance regarding the ultimate outcome of any claims, and their resolution could be material to operating results for any particular period.

Following the separation, the Company will indemnify each of its directors and officers for certain events or occurrences, subject to certain limits, while the officer or director is or was serving at the Company's request in such capacity, as permitted under Delaware law and in accordance with its certificate of incorporation and by-laws. The term of the indemnification period will last as long as a director or officer may be subject to any proceeding arising out of acts or omissions of such director or officer in such capacity. The maximum amount of potential future indemnification is unlimited; however, the Company expects to hold director and officer liability insurance following the separation.

8. Collaborative arrangements

To date, the Company's service and collaborative arrangement revenue has been primarily generated from collaboration arrangements with BMS, formerly Celgene Corporation ("Celgene") prior to its acquisition by BMS in November 2019, and Regeneron, each as further described below. These agreements will be attributed to the Company in connection with the separation.

Bristol-Myers Squibb

BMS Original Collaboration Agreement

In March 2013, bluebird bio entered into a Master Collaboration Agreement (the "BMS Collaboration Agreement") with Celgene (now BMS following its acquisition of Celgene in November 2019) to discover, develop and commercialize potentially disease-altering gene therapies in oncology. The collaboration is focused on applying gene therapy technology to genetically modify a patient's own T cells, known as chimeric antigen receptor, or CAR T cells, to target and destroy cancer cells. Additionally, in March 2013, bluebird bio entered into a Platform Technology Sublicense Agreement (the "Sublicense Agreement") with BMS pursuant to which bluebird bio

obtained a sublicense to certain intellectual property from BMS, originating under BMS's license from Baylor College of Medicine, for use in the collaboration.

Under the terms of the BMS Collaboration Agreement, the Company received an up-front, non-refundable, non-creditable payment of $75.0 million. The Company was responsible for conducting discovery, research and development activities through completion of phase 1 clinical studies, if any, during the initial term of the BMS Collaboration Agreement, or three years.

BMS Amended Collaboration Agreement

In June 2015, bluebird bio and BMS amended and restated the BMS Collaboration Agreement (the "Amended BMS Collaboration Agreement"). Under the Amended BMS Collaboration Agreement, the parties narrowed the focus of the collaboration to exclusively work on anti-B-cell maturation antigen ("BCMA") product candidates for a new three-year term. In connection with the Amended BMS Collaboration Agreement, the Company received an up-front, one-time, non-refundable, non-creditable payment of $25.0 million to fund research and development under the collaboration. Under the terms of the Amended BMS Collaboration Agreement, for up to two product candidates selected for development under the collaboration, the Company was responsible for conducting and funding all research and development activities performed up through completion of the initial phase 1 clinical study of such product candidates.

On a product candidate-by-product candidate basis, up through a specified period following enrollment of the first patient in an initial phase 1 clinical study for such product candidate, the Company had granted BMS an option to obtain an exclusive worldwide license to develop and commercialize such product. Following BMS's license of each product candidate, the Company is entitled to elect to co-develop and co-promote each product candidate in the United States.

BMS Ide-cel License Agreement

In February 2016, BMS exercised its option to obtain an exclusive worldwide license to develop and commercialize ide-cel, the first product candidate under the Amended BMS Collaboration Agreement, pursuant to an executed license agreement ("Ide-cel License Agreement") entered into by the parties in February 2016 and paid to the Company the associated $10.0 million option fee. Pursuant to the Ide-cel License Agreement, BMS was responsible for development and related funding of ide-cel after the substantial completion of the phase 1 clinical trial. The Company was responsible for the manufacture of vector and associated payload throughout development and upon BMS's request, throughout commercialization, the costs of which were reimbursable by BMS in accordance with the terms of the Amended and Restated Co-Development, Co-Promote and Profit Share Agreement, as further described below. BMS was responsible for the manufacture of drug product throughout development and commercialization. Under the Ide-cel License Agreement, the Company was eligible to receive U.S. milestones of up to $85.0 million for the first indication to be addressed by ide-cel and royalties for U.S. sales of ide-cel. Additionally, the Company was eligible to receive ex-U.S. milestones of up to $55.0 million and royalties for ex-U.S. sales of ide-cel.

BMS Ide-cel Co-Development, Co-Promote and Profit Share Agreement

In March 2018, the Company elected to co-develop and co-promote ide-cel within the United States pursuant to the execution of the Amended and Restated Co-Development, Co-Promote and Profit Share Agreement ("Ide-cel CCPS"), which replaced the Ide-cel License Agreement. As a result of executing the Ide-cel CCPS, the responsibilities of the parties remain unchanged from those under the Ide-cel License Agreement, however, the Company will share equally in all profits and losses relating to developing, commercializing and manufacturing ide-cel within the United States and has the right to participate in the development and promotion of ide-cel in the United States. BMS is responsible for the costs incurred to manufacture vector and associated payload for use outside of the United States, plus a markup. As a result of electing to co-develop and co-promote ide-cel within the United States, the milestones and royalties payable under the Ide-cel License Agreement were adjusted. Under the Ide-cel CCPS, the Company was eligible to receive a $10.0 million milestone related to the development of ide-cel in the United States and, for the first indication to be addressed by ide-cel, ex-U.S. regulatory and commercial

milestones of up to $60.0 million. Under the Ide-cel CCPS, the $10.0 million development milestone was achieved in the second quarter of 2019 and subsequently paid by BMS.

In May 2020, the First Amendment to the Amended and Restated Co-Development, Co-Promote and Profit Share Agreement (as amended, the "Amended Ide-cel CCPS") was executed, which amended the Ide-cel CCPS. Under the Amended Ide-cel CCPS, the parties will continue to share equally in all profits and losses related to developing, commercializing and manufacturing ide-cel within the United States. Under the Amended Ide-cel CCPS and the Amended bb21217 License Agreement, described further below, BMS was relieved of its obligations to pay the Company for future ex-U.S. milestones and royalties on ex-U.S. sales for each of ide-cel and bb21217 in exchange for an up-front, non-refundable, non-creditable payment of $200.0 million, which represents the aggregate of the probability-weighted, net present value of the future ex-U.S. milestones and royalties on ex-U.S. sales for each of ide-cel and bb21217. In connection with these amendments, BMS assumed the contract manufacturing agreements related to ide-cel adherent lentiviral vector. Over time, BMS is assuming responsibility for manufacturing ide-cel suspension lentiviral vector outside of the United States, with the Company responsible for manufacturing ide-cel suspension lentiviral vector in the United States. In addition, under the Amended Ide-cel CCPS and the Amended bb21217 License Agreement, described further below, the parties are released from future exclusivity related to BCMA-directed T cell therapies. There are no remaining milestones or royalties under the Amended Ide-cel CCPS.

Ide-cel is marketed as Abecma in the United States following its approval by the FDA in March 2021 for the treatment of adult patients with relapsed or refractory multiple myeloma after four or more prior lines of therapy, including an immunomodulatory agent, a proteasome inhibitor, and an anti-CD38 monoclonal antibody. Under the Amended Ide-cel CCPS, BMS is primarily responsible for the commercialization of Abecma and the Company has concluded BMS is the principal under ASC 808.

BMS bb21217 License Agreement

In September 2017, BMS exercised its option to obtain an exclusive worldwide license to develop and commercialize bb21217, the second product candidate under the Amended BMS Collaboration Agreement, pursuant to an executed license agreement (“bb21217 License Agreement”) entered into by the parties in September 2017 and paid the Company an option fee of $15.0 million. Pursuant to the bb21217 License Agreement, BMS is responsible for development and related funding of bb21217 after the substantial completion of the ongoing phase 1 clinical trial. In 2019, the parties amended the protocol for the ongoing phase 1 clinical trial to enroll additional patients for which the Company will be reimbursed based upon an agreed-upon amount per patient. Under the bb21217 License Agreement, the Company is eligible to receive U.S. milestones of up to $85.0 million for the first indication to be addressed by bb21217 and royalties for U.S. sales of bb21217. Additionally, the Company was eligible to receive ex-U.S. milestones of up to $55.0 million and royalties for ex-U.S. sales of bb21217.

In May 2020, the Second Amended and Restated License Agreement ("Amended bb21217 License Agreement") was executed, which replaced the bb21217 License Agreement. Under the Amended bb21217 License Agreement, over time, BMS is assuming responsibility for manufacturing suspension lentiviral vector outside of the United States, with the Company responsible for manufacturing suspension lentiviral vector in the United States. Under the Amended bb21217 License Agreement, expenses incurred by the Company associated with these activities are fully reimbursable by BMS at cost plus a mark-up. Throughout both development and commercialization, BMS is responsible for the manufacture of drug product. There are no remaining milestones and royalties related to the ex-U.S. development or commercialization of bb21217 following execution of the Amended bb21217 License Agreement.

The Company currently expects it will exercise its option to co-develop and co-promote bb21217 within the United States. The Company’s election to co-develop and co-promote bb21217 must be made by the substantial completion of the on-going phase 1 clinical trial of bb21217. If elected, the Company expects the responsibilities of the parties to remain largely unchanged, however, the Company expects it will share equally in all profits and losses relating to developing, commercializing and manufacturing bb21217 within the United States and to have the right to participate in the development and promotion of bb21217 in the United States. Under this scenario, the U.S. milestones and royalties payable under the Amended bb21217 License Agreement would be adjusted and the

Company would be eligible to receive a $10.0 million development milestone payment related to the development of bb21217 within the United States. The Company would not be eligible for royalties on U.S. sales of bb21217 under this scenario.

In the event the Company does not exercise its option to co-develop and co-promote bb21217, the Company will receive an additional fee in the amount of $10.0 million. Under this scenario, there would be no change to the U.S. milestones and royalties for U.S. sales of bb21217, as previously described above, for which the Company would be eligible to receive.

Accounting Analysis – Amended Ide-cel CCPS and Amended bb21217 License Agreement

In accordance with the Company's accounting policies related to variable consideration, as further described in Note 2, *Summary of Significant Accounting Policies and Basis of Presentation*, if an arrangement includes variable consideration, including milestone payments, the Company evaluates whether the milestones are considered probable of being achieved and estimates the amount to be included in the transaction price of an arrangement. If it is probable that a significant revenue reversal would not occur, the associated milestone value is included in the transaction price. Milestone payments that are not within the Company's control, such as regulatory approvals, are generally not considered probable of being achieved until those approvals are received. The Company recognizes royalty revenue and sales-based milestones at the later of (i) when the related sales occur, or (ii) when the performance obligation to which the royalty has been allocated has been satisfied.

Prior to the May 2020 amendments, the Company had constrained all variable consideration related to the remaining ex-U.S. milestones and royalties for ex-U.S. sales under the Ide-cel CCPS and bb21217 License Agreement. As a result of the May 2020 amendments, the uncertainty associated with the previously constrained variable consideration for future ex-U.S. milestones and royalties on ex-U.S. sales for each of ide-cel and bb21217 was resolved in exchange for an up-front, non-refundable, non-creditable payment of $200.0 million.

While the Ide-cel CCPS and bb21217 License Agreement were historically accounted for as separate contracts, the May 2020 amendments to each agreement were negotiated as a package with a single commercial objective and, as such, the Amended Ide-cel CCPS and Amended bb21217 License Agreement were combined for accounting purposes and treated as a single arrangement.

At the time of the May 2020 amendments, there was one remaining performance obligation under each of the Ide-cel CCPS and bb21217 License Agreement, neither of which were fully satisfied: a combined performance obligation of the ide-cel license and ide-cel vector manufacturing through development; and a combined performance obligation of the bb21217 license and bb21217 vector manufacturing through development. Subsequent to the May 2020 amendments, the Company concluded the two performance obligations are distinct from each other as BMS can benefit from each license and associated manufacturing services separately and the respective licenses and manufacturing services do not modify one another and are not interdependent. Accordingly, the Company will continue to account for each performance obligation separately.

The Company allocated the $200.0 million up-front payment received in connection with the May 2020 amendments to the remaining performance obligations described above based on the general allocation principles of Topic 606. In applying these principles, the Company considered the $200.0 million up-front payment is representative of previously constrained variable consideration that has been changed and the related uncertainties resolved by the May 2020 amendments. Moreover, the Company considered that a portion of the $200.0 million was specifically attributable to each remaining performance obligation as the amount represents the aggregate of the probability-weighted, net present value of the future ex-U.S. milestones and royalties on ex-U.S. sales for each of ide-cel and bb21217 and that each respective portion therefore (i) relates specifically to the Company's satisfaction of each of its remaining performance obligations and (ii) is representative of the amount of consideration the Company expects to be entitled to in exchange for satisfying the respective performance obligations. As such, the Company concluded that the portion of the $200.0 million up-front payment specifically attributable to each of ide-cel and bb21217 should be allocated to each respective performance obligation pursuant to the variable consideration allocation exception.

The Amended Ide-cel CCPS and Amended bb21217 License Agreement represent a contract modification to an existing contract under Topic 606 given the May 2020 amendments resulted in a reduction in scope of the Company's responsibilities under each performance obligation described above. Specifically, the May 2020 amendments reduced the scope of the Company's obligation to provide ex-U.S. vector manufacturing services through development for both ide-cel and bb21217 as those activities will transition to BMS over time. In addition, the May 2020 amendments resulted in a change in the overall transaction price under the arrangement. The May 2020 amendments did not include any additional promised goods and services.

The remaining goods and services to be provided in order to fully satisfy each performance obligation described above are not distinct from those previously provided with respect to each performance obligation. Therefore, for each performance obligation, the remaining goods and services are part of a single performance obligation that is partially satisfied at the date of the contract modification. Accordingly, the effect that the contract modification had on the transaction price and the measure of progress toward complete satisfaction of each respective performance obligation has been recognized on a cumulative catch-up basis. The accounting for any previously satisfied performance obligations as of the contract modification date are not affected by the modification.

Ide-cel transaction price

The following tables summarize the total transaction price, the allocation of the total transaction price to the identified performance obligations under the arrangement (including those performance obligations that were completed as of the May 2020 contract modification date), and the amount of the transaction price unsatisfied as of December 31, 2020 (in thousands):

	Ide-cel transaction price as of December 31, 2020
Upfront non-refundable payments received prior to May 2020 contract modification [(1)]	$ 120,000
Allocated portion of the upfront non-refundable payment received in connection with the Amended Ide-cel CCPS and bb21217 License Agreement [(2)]	184,029
Estimated variable consideration [(3)]	83,900
	$ 387,929

(1) Composed of all up-front payments and option fee and milestone payments received under the BMS Collaboration Agreement, Amended BMS Collaboration Agreement, Ide-cel License Agreement, and Ide-cel CCPS. This consideration was allocated to the performance obligations under the Ide-cel CCPS based on a relative stand-alone selling price ("SSP") basis. The Company estimated the SSP of the ide-cel license after considering potential future cash flows under the license. The Company then discounted these probability-weighted cash flows to their present value. The Company estimated the SSP of each of the ide-cel research and development services and ide-cel manufacturing services to be provided based on the Company's estimated cost of providing the services plus an applicable profit margin commensurate with observable market data for similar services.
(2) This represents the portion of the $200.0 million up-front payment received under the Amended Ide-cel CCPS and Amended bb21217 License Agreement which was allocated to ide-cel.
(3) Estimated variable consideration represents the estimated reimbursement from BMS for the manufacture of vectors and associated payload through development.

	Allocation of transaction price to performance obligations	Transaction price unsatisfied as of December 31, 2020
Ide-cel research and development services	$ 40,912	$ —
Ide-cel license and manufacturing services	347,017	1,082
	$ 387,929	$ 1,082

Ide-cel research and development services

The Company allocated $40.9 million of the transaction price to the research and development services. The Company satisfied this performance obligation as the research and development services were performed. The Company determined that the period of performance of the research and development services was through projected initial phase 1 clinical study substantial completion, or through May 2018. The research and development performance obligation was satisfied prior to the May 2020 amendments and, as a result, the accounting for this previously satisfied performance obligation was not affected by the modification. The Company recognized no revenue related to ide-cel research and development services for the year ended December 31, 2020. The Company recognized $2.3 million and $5.8 million related to ide-cel research and development services for the year ended December 31, 2019 and 2018, respectively.

Ide-cel license and manufacturing services

The Company allocated $347.0 million of the transaction price to the combined unit of accounting which consists of the license and manufacture of vectors and associated payload for incorporation into ide-cel.

The Company accounts for its vector manufacturing services for development in the United States and BMS's U.S. development efforts within the scope of ASC 808 given that both parties are active participants in the activities and both parties are exposed to significant risks and rewards dependent on the commercial success of the activities. The Company recognizes collaboration revenue for its U.S. manufacturing services by analogy to Topic 606. The portion of BMS's U.S. development costs that the Company is responsible for are recognized as a reduction to its collaboration revenues, or, if in excess of such revenues in a given quarter, the excess is recorded as research and development expense.

The Company recognizes revenue associated with the combined performance obligation using the proportional performance method, as the Company will satisfy this performance obligation as the manufacturing services are performed through development. In using this method, the Company estimated its development plan for ide-cel, including expected demand from BMS, and the costs associated with the manufacture of vectors and associated payload for incorporation into ide-cel. On a quarterly basis, the Company determines the proportion of effort incurred as a percentage of total effort it expects to expend. This ratio is applied to the transaction price, which includes variable consideration, allocated to the combined performance obligation consisting of the ide-cel license and manufacturing services. Management has applied significant judgment in the process of developing its budget estimates and any changes to these estimates will be recognized in the period in which they change as a cumulative catch-up.

The following table summarizes the net collaboration revenue recognized or expense incurred for the joint ide-cel development efforts in the United States under ASC 808, including revenue or expense related to the combined performance obligation for the license and vector manufacturing of ide-cel in the United States for the years ended December 31, 2020, 2019, and 2018 (in thousands):

	For the years ended December 31,		
	2020	2019	2018
ASC 808 ide-cel license and manufacturing revenue - U.S. [(1)]	$ 108,196	$ —	$ 6,255
ASC 808 ide-cel research and development expense - U.S. [(1)]	$ 41,599	$ 32,415	$ 8,689

(1) As noted above, the calculation of collaboration revenue or research and development expense to be recognized for joint ide-cel development efforts in the United States is performed on a quarterly basis. The calculation is independent of previous activity, which may result in fluctuations between revenue and expense recognition period over period, depending on the varying extent of effort performed by each party during the period.

Revenue related to the combined unit of accounting for the non-US license and vector manufacturing services is accounted for in accordance with Topic 606. The following table summarizes the revenue recognized related to the

combined unit of accounting for the ide-cel ex-U.S. license and vector manufacturing services for the years ended December 31, 2020, 2019, and 2018 (in thousands):

	For the years ended December 31		
	2020	2019	2018
ASC 606 ide-cel license and manufacturing revenue - ex-U.S.	$ 99,053	$ 25,522	$ 35,900

As of December 31, 2020, the aggregate amount of the transaction price allocated to the combined performance obligation, which consists of the ide-cel license and manufacturing services, that is unsatisfied, or partially unsatisfied, is $1.1 million, which the Company expects to recognize as revenue as manufacturing services are provided through the remaining development period. As of December 31, 2020 and 2019, the Company had $0.8 million and $8.5 million, respectively, of deferred revenue associated with the combined performance obligation consisting of the ide-cel license and manufacturing services.

bb21217 transaction price

The following tables summarize the total transaction price, the allocation of the total transaction price to the identified performance obligations under the arrangement (including those performance obligations that were completed as of the May 2020 contract modification date), and the amount of the transaction price unsatisfied as of December 31, 2020 (in thousands):

(in thousands)	bb21217 transaction price as of December 31, 2020
Upfront non-refundable payments received prior to May 2020 contract modification [(1)]	$ 15,000
Allocated portion of the up-front non-refundable payment received in connection with the Amended Ide-cel CCPS and bb21217 License Agreement [(2)]	15,971
Estimated variable consideration [(3)]	1,803
	$ 32,774

(1) Composed of the up-front non-refundable payment received under the bb21217 License Agreement. This consideration was allocated to the performance obligations under the bb21217 License Agreement based on a relative SSP basis. The Company estimated the SSP of the bb21217 license after considering potential future cash flows under the license. The Company then discounted these probability-weighted cash flows to their present value. The Company estimated the SSP of each of the bb21217 research and development services and bb21217 manufacturing services to be provided based on the Company's estimated cost of providing the services plus an applicable profit margin commensurate with observable market data for similar services.
(2) This represents the portion of the $200.0 million up-front payment received under the Amended Ide-cel CCPS and Amended bb21217 License Agreement which was allocated to bb21217.
(3) Estimated variable consideration represents the estimated reimbursement from BMS for the manufacture of vectors and associated payload through development.

	Allocation of transaction price to performance obligations	Transaction price unsatisfied as of December 31, 2020
bb21217 research and development services	$ 5,444	$ —
bb21217 license and manufacturing services	27,330	27,330
	$ 32,774	$ 27,330

All of the remaining development, regulatory, and commercial milestones under the Amended bb21217 License Agreement are related to U.S. development, regulatory and commercialization activities and are fully constrained and are therefore excluded from the transaction price. As part of its evaluation of the constraint, the Company considered numerous factors, including the fact that achievement of the milestones is outside the control of the Company and contingent upon the future success of its clinical trials, the licensee's efforts, or the receipt of

regulatory approval. Any consideration related to U.S. sales-based milestones (including royalties) will be recognized when the related sales occur as these amounts have been determined to relate predominantly to the license granted to BMS and therefore are recognized at the later of when the performance obligation is satisfied, or the related sales occur.

The Company re-evaluates the transaction price, including its estimated variable consideration included in the transaction price and all constrained amounts, each reporting period and as uncertain events are resolved or other changes in circumstances occur.

bb21217 research and development services

The Company satisfied this performance obligation as the research and development services were performed. The Company determined that the period of performance of the research and development services was two years through projected substantial completion of the initial phase 1 clinical study, or through September 2019. The research and development performance obligation was satisfied prior to the May 2020 amendments, and as a result, the accounting for this previously satisfied performance obligation was not affected by the modification. As part of performing its initial obligation to complete a phase 1 trial as originally contemplated, the Company recognized no revenue for the year ended December 31, 2020 and revenue of $2.2 million and $2.9 million for the years ended December 31, 2019 and 2018, respectively.

The agreement to expand the bb21217 phase 1 trial that occurred in 2019 was previously treated as a separate contract for accounting purposes, because the trial expansion was for the addition of a promised good or service that is distinct and the associated consideration reflected the stand-alone selling price of the additional promised good or service. This contract was not affected by the May 2020 amendments and, accordingly, the accounting for this agreement was not impacted by the May 2020 amendments. The transaction price associated with these additional patients consists of variable consideration and is based upon an agreed-upon amount per patient which will be recognized as revenue as the patients are treated. The Company began fulfilling the performance obligation in the fourth quarter of 2019 and it was satisfied in the fourth quarter of 2020. In connection with treating additional patients in the phase 1 trial, the Company recognized revenue of $12.4 million, $0.4 million, and $0.0 million for the years ended December 31, 2020, 2019, and 2018, respectively.

bb21217 license and manufacturing services

The Company will satisfy its performance obligation related to the manufacture of vectors and associated payload for incorporation into bb21217 through development as the bb21217 manufacturing services are performed. As of December 31, 2020, the manufacturing services for bb21217 had not yet commenced. Therefore, no amounts have been recognized for the combined performance obligation in the combined statements of operations and comprehensive loss for the years ended December 31, 2020, 2019, and 2018.

The aggregate amount of the transaction price allocated to the combined performance obligation, which consists of the bb21217 license and manufacturing services, is $27.3 million. The Company does not expect that recognition will begin in the next twelve months and has therefore classified deferred revenue associated with the combined performance obligation as deferred revenue, net of current portion on its combined balance sheet. The Company had $25.8 million and $9.8 million of remaining deferred revenue as of December 31, 2020 and 2019, respectively, associated with the combined performance obligation consisting of the bb21217 license and manufacturing services.

Contract assets and liabilities – ide-cel and bb21217

The Company receives payments from its collaborative partners based on billing schedules established in each contract. Up-front payments and fees are recorded as deferred revenue upon receipt or when due until such time as the Company satisfies its performance obligations under these arrangements. A contract asset is a conditional right to consideration in exchange for goods or services that the Company has transferred to a customer. Amounts are recorded as accounts receivable when the Company’s right to consideration is unconditional.

The following table presents changes in the balances of the Company's BMS receivables and contract liabilities during the twelve months ended December 31, 2020 (in thousands):

	Balance at December 31, 2019	Additions	Deductions	Balance at December 31, 2020
Receivables	$ 400	$ 12,400	$ (12,400)	$ 400
Contract liabilities:				
Deferred revenue	$ 18,265	$ 200,000	$ (191,683)	$ 26,582

The change in the receivables balance for the year ended December 31, 2020 is primarily driven by amounts owed to the Company for bb21217 research and development services provided during the period (expanded phase 1 clinical trial), offset by amounts collected from BMS in the period.

The increase in deferred revenue during the year ended December 31, 2020 is primarily driven by the $200.0 million consideration received in connection with the May 2020 amendments, offset by revenue recognized in the year-to-date period related to the combined unit of accounting for ide-cel license and vector manufacturing services. A total of $191.7 million was released from deferred revenue during the year-to-date period, of which $169.2 million is related to a cumulative catch-up adjustment to revenue recorded in connection with the May 2020 contract modification described further above. As of December 31, 2019, the Company had $8.5 million of deferred revenue associated with the combined performance obligation consisting of the ide-cel license and manufacturing services, of which $8.2 million was released during the year ended December 31, 2020.

Regeneron

Regeneron Collaboration Agreement

In August 2018, bluebird bio entered into a Collaboration Agreement (the "Regeneron Collaboration Agreement") with Regeneron pursuant to which the parties will apply their respective technology platforms to the discovery, development, and commercialization of novel immune cell therapies for cancer. In August 2018, following the completion of required regulatory reviews, the Regeneron Collaboration Agreement became effective. As noted above, the agreement will be attributed to the Company in connection with the separation. Under the terms of the agreement, the parties will leverage Regeneron's proprietary platform technologies for the discovery and characterization of fully human antibodies, as well as T cell receptors directed against tumor-specific proteins and peptides and the Company will contribute its field-leading expertise in gene therapy.

In accordance with the Regeneron Collaboration Agreement, the parties jointly selected six initial targets and intend to equally share the costs of research up to the point of submitting an IND application for a potential gene therapy product directed to a particular target. Additional targets may be selected to add to or replace any of the initial targets during the five-year research collaboration term as agreed to by the parties.

Regeneron will accrue a certain number of option rights exercisable against targets as the parties reach certain milestones under the terms of the agreement. Upon the acceptance of an IND for the first product candidate directed to a target, Regeneron will have the right to exercise an option for co-development/co-commercialization of product candidates directed to such target on a worldwide or applicable opt-in territory basis, with certain exceptions. Where Regeneron chooses to opt-in, the parties will share equally in the costs of development and commercialization, and will share equally in any profits or losses therefrom in applicable opt-in territories. Outside of the applicable opt-in territories, the target becomes a licensed target and Regeneron would be eligible to receive, with respect to any resulting product, milestone payments of up to $130.0 million per product and royalties on net sales outside of the applicable opt-in territories at a rate ranging from the mid-single digits to low-double digits. A target would also become a licensed target in the event Regeneron does not have an option to such target, or Regeneron does not exercise its option with respect to such target.

Either party may terminate a given research program directed to a particular target for convenience, and the other party may elect to continue such research program at its expense, receiving applicable cross-licenses. The terminating party will receive licensed product royalties and milestone payments on the potential applicable gene

therapy products. Where the Company terminates a given research program for convenience, and Regeneron elects to continue such research program, the parties will enter into a transitional services agreement. Under certain conditions, following its opt-in, Regeneron may terminate a given collaboration program and the Company may elect to continue the development and commercialization of the applicable potential gene therapy products as licensed products.

Regeneron Share Purchase Agreement

A Share Purchase Agreement ("SPA") was entered into by bluebird bio and Regeneron in August 2018. In August 2018, on the closing date of the transaction, bluebird bio issued Regeneron 0.4 million shares of bluebird bio's common stock, subject to certain restrictions, for $238.10 per share, or $100.0 million in the aggregate. The purchase price represents $63.0 million worth of common stock plus a $37.0 million premium, which represents a collaboration research advancement, or credit to be applied to Regeneron's initial 50 percent funding obligation for collaboration research, after which the collaborators will continue to fund ongoing research equally. The collaboration research advancement only applies to pre-IND research activities and is not refundable or creditable against post-IND research activities for any programs where Regeneron exercises its opt-in rights.

Accounting analysis – Regeneron

At the commencement of the arrangement, two units of accounting were identified, which are the issuance of 0.4 million shares of bluebird bio's common stock and joint research activities during the five year research collaboration term. The Company determined the total transaction price to be $100.0 million, which comprises $54.5 million attributed to the bluebird bio equity sold to Regeneron and $45.5 million attributed to the joint research activities. In determining the fair value of the bluebird bio common stock at closing, the Company considered the closing price of the bluebird bio common stock on the closing date of the transaction and included a lack of marketability discount because Regeneron received shares subject to certain restrictions.

The Company analyzed the joint research activities to assess whether they fall within the scope of ASC 808, and will reassess this throughout the life of the arrangement based on changes in the roles and responsibilities of the parties. Based on the terms of the arrangement as outlined above, for the collaboration research performed prior to submission of an IND application for a potential gene therapy product, both parties are deemed to be active participants in the collaboration. Both parties are performing research and development activities and will share equally in these costs through IND. Additionally, Regeneron and the Company are exposed to significant risks and rewards dependent on the commercial success of any product candidates that may result from the collaboration. As such, the collaboration arrangement is deemed to be within the scope of ASC 808.

The $45.5 million attributed to the joint research activities includes the $37.0 million creditable against amounts owed to the Company by Regeneron. The collaboration research advancement will be reduced over time for amounts due to the Company by Regeneron as a result of the parties agreeing to share in the costs of collaboration research equally. The remainder of the amount attributed to the joint research activities will be recognized over the five-year research collaboration term.

Consistent with its collaboration accounting policy, the Company will recognize collaboration revenue or research and development expense related to the joint research activities in future periods depending on the amounts incurred by each party in a given reporting period. That is, if the Company's research costs incurred exceed those research costs incurred by Regeneron in a given quarter, the Company will record collaboration revenue and reduce the original $37.0 million advance by the amount due from Regeneron until such advancement is fully utilized, after which the Company would record an amount due from Regeneron. If Regeneron's research costs incurred exceed those research costs incurred by the Company in a given quarter, the Company will record research and development expense and record a liability for the amount due to Regeneron. As of December 31, 2020 and 2019, the Company has $30.8 million and $38.2 million, respectively, of the amount attributed to the joint research activities remaining to be recognized which is classified as collaboration research advancement, current portion and collaboration research advancement, net of current portion on the combined balance sheet.

The Company recognized $7.4 million and $5.7 million of collaboration revenue from the Regeneron Collaboration Agreement during the years ended December 31, 2020 and 2019, respectively.

9. Royalty and other revenue

Novartis Pharma AG

In April 2017, bluebird bio entered into a worldwide license agreement with Novartis. Under the terms of the agreement, Novartis non-exclusively licensed certain patent rights related to lentiviral vector technology to develop and commercialize CAR T cell therapies for oncology, including Kymriah (formerly known as CTL19), Novartis's anti-CD19 CAR T therapy. The agreement will be attributed to the Company in connection with the separation. At contract inception, financial terms of the agreement included a $7.5 million payment upon execution, $7.5 million of potential future milestone payments associated with regulatory approvals, and $1.1 million of payments for each subsequently licensed product, as well as low single digit royalty payments on net sales of covered products. In August 2017, Novartis received FDA approval for Kymriah and paid the Company $2.5 million as a result of the achievement of a related milestone.

Under Topic 606, the Company identified only one performance obligation, consisting of the license, which was satisfied at contract inception. Accordingly, the nonrefundable license fee of $7.5 million was recognized as revenue upon contract execution in the second quarter of 2017 and a $2.5 million regulatory milestone was recognized as revenue upon milestone achievement, also in the second quarter of 2017, given there were no other unsatisfied performance obligations in the arrangement. Regulatory approvals are not within the Company's control or the licensee's control and are generally not considered probable of being achieved until those approvals are received. As such, these milestones are constrained until such time as regulatory approvals are received. Because the single performance obligation was previously satisfied, all regulatory milestones will be recognized as revenue in full in the period in which the associated milestone is achieved.

The Company began recognizing royalty revenue from sales of Kymriah in the fourth quarter of 2017. As the license was deemed to be the predominant item to which the royalties relate, the Company recognizes royalties from the sales of Kymriah when the related sales occur. For the years ended December 31, 2020, 2019, and 2018, the Company recognized royalty and other revenue of $21.1 million, $8.2 million, and $2.2 million, respectively. For the years ended December 31, 2020, 2019, and 2018, the Company recognized cost of royalty and other revenue of $5.4 million, $3.0 million, and $0.9 million, respectively.

In December 2020, the Company received notice of termination from Novartis for the license agreement described above. This termination is effective in March 2021 and Novartis will no longer be required to pay the Company royalty or other payments on net sales of Kymriah or any future products.

Juno Therapeutics

In May 2020, bluebird bio entered into a non-exclusive license agreement with Juno Therapeutics, Inc. ("Juno"), a wholly-owned subsidiary of BMS, related to lentiviral vector technology to develop and commercialize CD-19-directed CAR T cell therapies. The agreement will be attributed to the Company in connection with the separation. Under the terms of this agreement, the Company may receive regulatory milestones for the first licensed product and a low single-digit royalty based on aggregate net sales.

10. Intangible assets

Intangible assets, net of accumulated amortization, are summarized as follows (in thousands):

	As of December 31, 2020			As of December 31, 2019		
	Cost	Accumulated amortization	Net	Cost	Accumulated amortization	Net
Developed technology	$ 30,100	$ (24,456)	$ 5,644	$ 30,100	$ (20,694)	$ 9,406
Total	$ 30,100	$ (24,456)	$ 5,644	$ 30,100	$ (20,694)	$ 9,406

Amortization expense for intangible assets was $3.8 million for each of the years ended December 31, 2020, 2019 and 2018.

Developed technology

The Company's developed technology was obtained through the acquisition of Pregenen, a privately-held biotechnology company in 2014. The Company obtained gene editing and cell signaling technology with a broad range of potential therapeutic applications. The Company considered the intangible asset acquired to be developed technology, as at the date of the acquisition it could be used the way it was intended to be used in certain ongoing research and development activities. The gene editing platform intangible asset is being amortized on a straight-line basis over its expected useful life of approximately eight years from the date of the acquisition.

The following table summarizes the estimated future amortization for intangible assets for the next five years and thereafter (in thousands):

	As of December 31, 2020
2021	$ 3,763
2022	1,881
Total	$ 5,644

11. Stock-based compensation

In June 2013, bluebird bio's board of directors adopted its 2013 Stock Option and Incentive Plan ("2013 Plan"), which was subsequently approved by its stockholders and became effective upon the closing of bluebird bio's IPO. The 2013 Plan replaces the 2010 Stock Option and Grant Plan ("2010 Plan").

The 2013 Plan allows for the granting of incentive stock options, non-qualified stock options, restricted stock units and restricted stock awards to bluebird bio's employees, members of the board of directors, and consultants of bluebird bio, including those of bluebird bio who will become employees of the Company in connection with the separation. All awards granted under bluebird bio's plans consist of shares of bluebird bio's common stock. Accordingly, the amounts presented are not necessarily indicative of future stock-based compensation and do not necessarily reflect the amounts that the Company would have recorded as an independent, publicly traded company for the periods presented.

In June 2013, bluebird bio's board of directors adopted its 2013 Employee Stock Purchase Plan ("2013 ESPP"), which was subsequently approved by its stockholders and became effective upon the closing of bluebird bio's IPO. The 2013 ESPP authorizes the initial issuance of a specified number of shares of bluebird bio's common stock to participating employees.

Stock-based compensation expense

Stock-based compensation expense was allocated to the Company using a combination of specific identification and time spent on projects at various levels of the organization, which management believes are consistent and reasonable.

Stock-based compensation expense under bluebird bio's stock option and incentive plans allocated to the Company by classification included within the combined statements of operations and comprehensive loss was as follows (in thousands):

	Year Ended December 31,		
	2020	2019	2018
Research and development	$ 30,935	$ 33,853	$ 21,846
Selling, general and administrative	30,062	28,196	18,955
	$ 60,997	$ 62,049	$ 40,801

12. Related-party transactions

Historically, the Company has been managed and operated in the normal course of business under bluebird bio. Accordingly, certain shared costs have been allocated to the Company and reflected as expenses in the Company's stand-alone combined financial statements. The expenses reflected in the combined financial statements may not be indicative of expenses that will be incurred by the Company in the future.

Corporate allocations

The combined financial statements reflect allocations of certain expenses from bluebird bio, including, but not limited to, general corporate expenses, such as senior management, legal, human resources, accounting, other financial services (such as treasury, audit and purchasing), tax, information technology, and corporate employee benefits, incentives and stock-based compensation included within selling, general and administrative expense.

These expenses have been allocated to the Company based on direct usage or benefit where specifically identifiable, with the remainder allocated based on employee time spent on projects, square footage or other measures that management believes are consistent and reasonable. Allocations for management costs and corporate support services provided to the Company totaled $76.6 million, $67.8 million and $44.0 million for the years ended December 31, 2020, 2019 and 2018, respectively.

The financial information in these combined financial statements does not necessarily include all the expenses that would have been incurred by the Company had it been a separate, stand-alone entity. Actual costs that may have been incurred if the Company had been a stand-alone company would depend on a number of factors, including the chosen organization structure and functions outsourced or performed by employees. See Note 2, *Summary of significant accounting policies and basis of presentation*, for additional information on the preparation and basis of presentation of these combined financial statements, including the treatment of certain research and development costs not directly attributable to individual programs.

Usage of the Company's assets by bluebird bio and of bluebird bio's assets by the Company

Certain assets have been reflected in these combined financial statements as the underlying assets will be attributed to the Company; however, bluebird bio has historically utilized a portion of the underlying asset as part of its operations. Accordingly, the expense related to the underlying asset has been reflected in the combined financial statements. The Company has also recorded an imputed charge to bluebird bio to reflect the cost of bluebird bio's proportional usage. In addition, the Company has recorded as an expense an imputed charge to reflect the cost of the Company's proportional usage of certain underlying assets not reflected in the combined financial statements but for which the Company has historically utilized a portion of the underlying asset as part of its operations. The income and expense recognized by the Company resulting from these imputed charges is recorded as other income, net in the combined financial statements and was as follows:

	Year ended December 31,		
	2020	2019	2018
Imputed charge to bluebird bio for leases	$ 16,562	$ 17,694	$ 15,139
Imputed charge from bluebird bio for leases	(1,072)	(696)	—
Imputed charge to bluebird bio for property, plant and equipment	2,225	3,385	4,274
Imputed charge from bluebird bio for property, plant and equipment	(229)	(99)	(59)
Imputed charge to bluebird bio for intangible assets	199	65	204
Other	155	(116)	(228)
	$ 17,840	$ 20,233	$ 19,330

Other components of other income, net, that are not shown in the table above include immaterial gains and losses on disposals of fixed assets.

Stock-based compensation

As discussed in Note 11, *Stock-based compensation*, 2seventy bio's employees participate in bluebird bio's stock-based compensation plans, the costs of which have been allocated to 2seventy bio and recorded in research and development and selling, general and administrative expenses in the combined statements of operations and comprehensive loss.

Retirement plans

As discussed in Note 13, *401(k) Savings plan*, 2seventy bio's employees participate in bluebird bio's 401(k) Savings plan, the costs of which have been allocated to 2seventy bio and recorded in research and development and selling, general and administrative expenses in the combined statements of operations and comprehensive loss.

Transaction costs

As of December 31, 2020, bluebird bio had incurred an immaterial amount of costs related to the separation of the Company. To the extent separation costs are incurred that will directly benefit the Company as a stand-alone company, such costs will be allocated to the Company.

Centralized cash management

No separate cash accounts for 2seventy bio were historically maintained and, therefore, bluebird bio is presumed to have funded 2seventy bio's operating, investing and financing activities as necessary. As cash is disbursed and received by bluebird bio, for purposes of the combined financial statements, funding of 2seventy bio's expenditures is reflected in the combined financial statements as a component of net parent investment.

13. 401(k) Savings plan

In 1997, bluebird bio established a defined-contribution savings plan under Section 401(k) of the Internal Revenue Code ("the 401(k) Plan"). The 401(k) Plan covers all employees who meet defined minimum age and service requirements, including those who will become employees of the Company, and allows participants to defer a portion of their annual compensation on a pretax basis. Expense related to the 401(k) Plan allocated to the Company totaled $2.2 million, $2.0 million, $0.9 million for the years ended December 31, 2020, 2019, and 2018, respectively.

14. Income taxes

The components of loss before income taxes were as follows (in thousands):

	Year ended December 31,		
	2020	2019	2018
U.S.	(120,114)	(320,594)	(199,749)
Foreign	—	—	—
Total	$ (120,114)	$ (320,594)	$ (199,749)

For the years ended December 31, 2020, 2019 and 2018, the Company did not recognize any income tax expense (benefit) as the Company was subject to a full valuation allowance. A reconciliation of income tax expense

(benefit) computed at the statutory federal income tax rate to the Company's effective income tax rate as reflected in the financial statements is as follows:

	Year ended December 31,		
	2020	2019	2018
Federal income tax expense at statutory rate	21.0 %	21.0 %	21.0 %
State income tax, net of federal benefit	3.8 %	5.5 %	6.5 %
Permanent differences	0.3 %	(0.1)%	(0.2)%
Stock-based compensation	(4.1)%	(0.5)%	2.1 %
Research and development credit	13.8 %	5.6 %	9.6 %
Officer compensation limitation	(1.6)%	(0.7)%	(0.2)%
Uncertain tax positions	(1.1)%	(0.4)%	(0.8)%
Other	— %	(0.2)%	— %
Change in valuation allowance	(32.1)%	(30.2)%	(38.0)%
Effective income tax rate (expense) benefit	— %	— %	— %

Deferred taxes are recognized for temporary differences between the basis of assets and liabilities for financial statement and income tax purposes. The significant components of the Company's deferred tax assets and liabilities are composed of the following (in thousands):

	Year ended December 31,	
	2020	2019
Deferred tax assets:		
U.S. net operating loss carryforwards (federal and state)	$ 149,570	$ 122,303
Tax credit carryforwards (federal and state)	49,379	34,152
Capitalized license fees and research and development expenses	13,091	14,744
Deferred revenue	15,348	15,233
Stock-based compensation	21,400	18,786
Lease liabilities	34,119	36,499
Accruals and other	2,715	6,112
Total deferred tax assets	285,622	247,829
Intangible assets	(1,509)	(2,537)
Right-of-use assets	(31,139)	(33,776)
Fixed assets	(5,477)	(2,598)
Less: valuation allowance	(247,497)	(208,918)
Net deferred taxes	$ —	$ —

A valuation allowance is recorded against deferred tax assets if it is more likely than not that some or all of the deferred tax assets will not be realized. Due to the uncertainty surrounding the realization of the favorable tax attributes in future tax returns, the Company has recorded a full valuation allowance against the Company's otherwise recognizable net deferred tax assets. The valuation allowance increased on a net basis by approximately $38.6 million during the year ended December 31, 2020 due primarily to net operating losses, tax credit carryforwards, and stock-based compensation. Effective January 1, 2019, the Company adopted ASU 2016-02, which resulted in the de-recognition of the 60 Binney Street lease and related fixed assets and the recognition of lease liabilities and right-of-use assets. The Company adjusted its deferred tax balances as a result of the adoption.

As of December 31, 2020, 2019 and 2018, the Company had U.S. federal net operating loss carryforwards of approximately $559.6 million, $453.9 million, and $171.1 million, respectively, which may be available to offset future income tax liabilities and which will carryforward indefinitely. As of December 31, 2020, 2019 and 2018, the Company also had U.S. state net operating loss carryforwards of approximately $507.2 million, $427.1 million, and

$161.4 million, respectively, which may be available to offset future income tax liabilities and expire at various dates through 2040.

As of December 31, 2020, 2019 and 2018, the Company had federal research and development and orphan drug tax credit carryforwards of approximately $43.6 million, $29.8 million, and $15.0 million, respectively, available to reduce future tax liabilities which expire at various dates through 2040. As of December 31, 2020, 2019 and 2018, the Company had state research and development credit carryforwards of approximately $6.7 million, $5.0 million, and $3.1 million, respectively, available to reduce future tax liabilities which expire at various dates through 2035. The Company also has Massachusetts investment tax credit carryforwards of approximately $0.6 million, $0.5 million and $0.3 million available to reduce future tax liabilities which expire at various dates through 2023. An analysis of the U.S. research and development and orphan drug credits has not yet been completed for 2018, 2019, or 2020.

Utilization of the net operating loss carryforwards and research and development tax credit carryforwards may be subject to an annual limitation under Section 382 of the Internal Revenue Code of 1986, as amended (the “Internal Revenue Code”), and corresponding provisions of state law, due to ownership changes that have occurred previously or that could occur in the future. These ownership changes may limit the amount of carryforwards that can be utilized annually to offset future taxable income. In general, an ownership change, as defined by Section 382, results from transactions increasing the ownership of certain shareholders or public groups in the stock of a corporation by more than 50 percent over a three-year period. The Company has not conducted a study to assess whether a change of control has occurred or whether there have been multiple changes of control since inception due to the significant complexity and cost associated with such a study. If the Company has experienced a change of control, as defined by Section 382, at any time since inception, utilization of the net operating loss carryforwards or research and development tax credit carryforwards would be subject to an annual limitation under Section 382, which is determined by first multiplying the value of the Company’s stock at the time of the ownership change by the applicable long-term tax-exempt rate, and then could be subject to additional adjustments, as required. Any limitation may result in expiration of a portion of the net operating loss carryforwards or research and development tax credit carryforwards before utilization. Further, until a study is completed and any limitation is known, no amounts are being presented as an uncertain tax position.

The Company did not operate as a stand-alone entity (or group of entities) in the past and, accordingly, the amount and composition of its tax losses, credits, and other deferred tax assets included in the combined financial statements may change as the result of the Company’s separation from bluebird bio.

In March 2020, the Coronavirus Aid, Relief and Economic Security Act (“CARES Act”) was enacted. This law temporarily suspends and adjusts certain law changes enacted in the Tax Cuts and Jobs Act in 2017. In December 2020, the Consolidated Appropriations Act was enacted. This law modified the employee retention credit under the CARES Act and created credit extenders for certain credits. The Company has concluded that the provisions in the CARES Act and Consolidated Appropriations Act have an immaterial impact on the Company’s income tax expense due to its cumulative losses and full valuation allowance position.

bluebird bio files Federal and state income tax returns in the United States, which includes the Company’s operations. The Federal and state income tax returns are generally subject to tax examinations for the tax years ended December 31, 2017 through December 31, 2019. To the extent the Company has tax attribute carryforwards, the tax years in which the attribute was generated may still be adjusted upon examination by the Internal Revenue Service, or state or foreign tax authorities to the extent utilized in a future period.

A reconciliation of the beginning and ending amount of unrecognized tax benefits is as follows (in thousands):

	Unrecognized tax benefits
Balance as of December 31, 2018	$ 1,624
Increases (decreases) for tax positions related to current period	1,446
Increases (decreases) for tax positions related to prior periods	—
Balance as of December 31, 2019	3,070
Increases (decreases) for tax positions related to current period	1,333
Increases (decreases) for tax positions related to prior periods	—
Balance as of December 31, 2020	$ 4,403

The unrecognized tax benefits at December 31, 2020, if recognized, would not affect the Company's effective tax rate due to its full valuation allowance position. The Company does not anticipate that the amount of existing unrecognized tax benefits will significantly increase or decrease within the next 12 months. The Company has elected to include interest and penalties related to uncertain tax positions as a component of its provision for income taxes. For the years ended December 31, 2020, 2019 and 2018, the Company's accrued interest and penalties related to uncertain tax positions were not material.

15. Subsequent events

The Company has assessed subsequent events through May 11, 2021, the date the financial statements were available to be issued. No material events subsequent to December 31, 2020 were noted for disclosure

16. Subsequent events (Unaudited)

In July 2021, bluebird bio and National Resilience, Inc. ("Resilience") announced a strategic manufacturing collaboration aimed to accelerate the early research, development, and delivery of cell therapies. As part of the agreement, Resilience will acquire bluebird bio's manufacturing facility located in Durham, North Carolina and is expected to retain all staff currently employed at the site. This manufacturing facility was initially assigned to the Company as part of the separation. Following the closing of the acquisition, Resilience is expected to continue to support vector supply for both bluebird bio and the Company.

2seventy bio, Inc.

Condensed Combined Balance Sheets
(unaudited)
(in thousands)

	June 30, 2021	December 31, 2020
Assets		
Current assets:		
Prepaid expenses	$ 7,255	$ 14,413
Receivables	11,370	10,691
Total current assets	18,625	25,104
Property, plant and equipment, net	144,855	144,025
Intangible assets, net	12,127	5,644
Goodwill	13,128	13,128
Operating lease right-of-use assets	109,089	116,456
Other non-current assets	5,920	8,263
Total assets	$ 303,744	$ 312,620
Liabilities and Equity		
Current liabilities:		
Accounts payable	$ 18,978	$ 7,152
Accrued expenses and other current liabilities	61,625	43,347
Operating lease liability, current portion	14,100	15,313
Deferred revenue, current portion	—	820
Collaboration research advancement, current portion	9,080	9,236
Total current liabilities	103,783	75,868
Deferred revenue, net of current portion	25,762	25,762
Collaboration research advancement, net of current portion	18,547	21,581
Operating lease liability, net of current portion	104,075	112,290
Other non-current liabilities	2,888	2,490
Total liabilities	255,055	237,991
Commitments and contingencies (*Note 7)*		
Equity:		
Net parent investment	48,689	74,629
Total equity	48,689	74,629
Total liabilities and equity	$ 303,744	$ 312,620

See accompanying notes to unaudited condensed combined financial statements.

2seventy bio, Inc.

Condensed Combined Statements of Operations and Comprehensive Income (Loss)
(unaudited)
(in thousands)

	Six months ended June 30,	
	2021	2020
Revenue:		
Service revenue	$ 11,232	$ 94,219
Collaborative arrangement revenue	3,190	111,976
Royalty and other revenue	4,807	13,587
Total revenues	19,229	219,782
Operating expenses:		
Research and development	141,263	155,332
Selling, general and administrative	46,029	46,847
Share of collaboration loss	10,071	—
Cost of royalty and other revenue	1,791	2,579
Change in fair value of contingent consideration	416	(4,763)
Total operating expenses	199,570	199,995
(Loss) income from operations	(180,341)	19,787
Other income, net	9,103	8,973
(Loss) income before income taxes	(171,238)	28,760
Income tax (expense) benefit	—	—
Net (loss) income and comprehensive (loss) income	$ (171,238)	$ 28,760

See accompanying notes to unaudited condensed combined financial statements.

2seventy bio, Inc.

Condensed Combined Statements of Equity
(unaudited)
(in thousands)

	Net parent investment
Balances at December 31, 2020	$ 74,629
Stock-based compensation	29,077
Transfers from bluebird bio	116,221
Net loss	(171,238)
Balances at June 30, 2021	$ 48,689

	Net parent investment
Balances at December 31, 2019	$ 43,692
Stock-based compensation	33,303
Transfers to bluebird bio	(37,358)
Net income	28,760
Balances at June 30, 2020	$ 68,397

See accompanying notes to unaudited condensed combined financial statements.

2seventy bio, Inc.

Condensed Combined Statements of Cash Flows
(unaudited)
(in thousands)

	Six months ended June 30,	
	2021	2020
Cash flows from operating activities:		
Net (loss) income	$ (171,238)	$ 28,760
Adjustments to reconcile net (loss) income to net cash (used in) provided by operating activities:		
Change in fair value of contingent consideration	416	(4,763)
Depreciation and amortization	8,148	6,531
Stock-based compensation expense	29,077	33,303
Other non-cash items	322	22
Changes in operating assets and liabilities:		
Prepaid expenses and other assets	8,822	(8,279)
Operating lease right-of-use assets	7,367	6,736
Accounts payable	7,157	(10,762)
Accrued expenses and other liabilities	17,122	(3,958)
Operating lease liabilities	(9,428)	(6,275)
Deferred revenue	(820)	11,412
Collaboration research advancement	(3,190)	(3,779)
Net cash (used in) provided by operating activities	(106,245)	48,948
Cash flows from investing activities:		
Purchases of property, plant and equipment	(7,976)	(11,590)
Purchase of intangible assets	(2,000)	—
Net cash used in investing activities	(9,976)	(11,590)
Cash flows from financing activities:		
Transfers from (to) bluebird bio	116,221	(37,358)
Net cash provided by (used in) financing activities	116,221	(37,358)
Increase (decrease) in cash, cash equivalents and restricted cash	—	—
Cash, cash equivalents and restricted cash at beginning of period	—	—
Cash, cash equivalents and restricted cash at end of period	$ —	$ —
Supplemental cash flow disclosures:		
Purchases of property, plant and equipment included in accounts payable and accrued expenses	$ 1,345	$ 773
Purchase of intangible assets included in accounts payable and accrued expenses, net of reimbursement receivable of $6.5 million from collaboration partner	$ 6,500	$ —
Right-of-use assets obtained in exchange for operating lease liabilities	$ —	$ 238
Cash paid during the period for interest	$ —	$ —
Cash paid during the period for income taxes	$ —	$ —

See accompanying notes to unaudited condensed combined financial statements.

1. Description of the business

2seventy bio, Inc. (the “Company” or “2seventy bio”) is a cell and gene therapy company focused on the research, development, and commercialization of transformative treatments for cancer. The Company’s approach combines its expertise in T cell engineering technology and lentiviral vector gene delivery approaches, experience in research, development, and manufacturing of cell therapies and a suite of technologies that can be selectively deployed to develop highly innovative, targeted cellular therapies for patients with cancer. The Company is advancing multiple preclinical and clinical programs in oncology and, together with Bristol-Myers Squibb (“BMS”), delivering the first FDA-approved CAR T therapy in multiple myeloma, ABECMA® (idecabtagene vicleucel; ide-cel), to patients in the United States. Please refer to Note 8, *Collaborative arrangements*, for further discussion of the collaboration with BMS.

In March 2021, BMS received marketing approval from the U.S. Food and Drug Administration for ABECMA® as a treatment of adult patients with relapsed or refractory multiple myeloma after four or more prior lines of therapy, including an immunomodulatory agent, a proteasome inhibitor, and an anti-CD38 monoclonal antibody. Sales of ABECMA® by BMS began in the second quarter of 2021.

The separation

In January 2021, bluebird bio, Inc. (“bluebird bio”) announced its plans to separate its oncology portfolio and programs from its severe genetic disease, or SGD, portfolio and programs through a pro rata distribution of 2seventy bio's common stock to stockholders of bluebird bio. As a part of the separation, bluebird bio intends to transfer the assets, liabilities and operations of its oncology portfolio and programs to 2seventy bio, pursuant to the terms of a separation agreement, to be entered into between 2seventy bio and bluebird bio. On the distribution date, each bluebird bio stockholder will receive a pro rata share of 2seventy bio's common stock for every share of bluebird bio common stock held of record at the close of business on the record date for the distribution. Registered stockholders will receive cash in lieu of any fractional shares of 2seventy bio's common stock that they would have received as a result of the application of the distribution ratio. Following the distribution, 2seventy bio will operate as a separate, independent, publicly traded company. The distribution of 2seventy bio's common stock is subject to the satisfaction or waiver by bluebird bio of certain conditions.

Going concern

In accordance with Accounting Standards Codification (“ASC”) 205-40, *Going Concern*, the Company evaluated whether there are conditions and events, considered in the aggregate, that raise substantial doubt about its ability to continue as a going concern within one year after the date that the condensed combined financial statements are issued. The Company has incurred losses and has experienced negative operating cash flows for the six months ended June 30,2021. During the six months ended June 30, 2021, the Company incurred a loss of $171.2 million and used $106.2 million of cash in operations. The Company expects to continue to generate operating losses and negative operating cash flows for the next few years. The Company's continued operations are dependent on its ability to raise additional funding. The Company expects to finance its cash needs through a cash contribution from bluebird bio in connection with separation as well as through a combination of public or private equity offerings, debt financings, collaborations, strategic alliances or licensing arrangements with third parties. However, there can be no assurance that such financing will be available in sufficient amounts or on acceptable terms, if at all. If the Company is unable to obtain additional funding on a timely basis, it may be forced to significantly curtail, delay, or discontinue one or more of its planned research or development programs or be unable to expand its operations. Based on its recurring losses from operations, expectation of continuing operating losses for the next few years, and the need to raise additional funding to finance its future operations, as of September 9, 2021, the issuance date of the condensed combined financial statements for the six months ended June 30, 2021, the Company has concluded that there is substantial doubt about its ability to continue as a going concern for a period of one year from the date that these condensed combined financial statements are issued. The accompanying condensed combined financial statements do not include any adjustments that might result from the outcome of this uncertainty.

2. Summary of significant accounting policies and basis of presentation

Basis of presentation

The accompanying condensed combined financial statements have been prepared on a carve-out basis and are derived from bluebird bio's consolidated financial statements and accounting records. The accompanying condensed combined financial statements reflect the historical results of operations, financial position and cash flows of the Company and have been prepared by the Company in accordance with accounting principles generally accepted in the United States ("GAAP"). Any reference in these notes to applicable guidance is meant to refer to the authoritative United States GAAP as included in the Accounting Standards Codification ("ASC") and Accounting Standards Updates ("ASUs") of the Financial Accounting Standards Board ("FASB"). Certain information and footnote disclosures included in the Company's annual financial statements have been condensed or omitted. These condensed combined financial statements, in the opinion of management, reflect all normal recurring adjustments necessary for a fair presentation of the Company's financial position and results of operations for the interim periods ended June 30, 2021 and 2020.

The historical results of operations, financial position and cash flows of 2seventy bio presented in these condensed combined financial statements may not be indicative of what they would have been had 2seventy bio been an independent stand-alone entity, nor are they necessarily indicative of 2seventy bio's future results of operations, financial position and cash flows.

The results of operations for the interim periods are not necessarily indicative of the results of operations to be expected for the full year. These condensed combined financial statements should be read in conjunction with the audited combined financial statements as of and for the year ended December 31, 2020 and the notes thereto.

As part of bluebird bio, the Company was dependent upon bluebird bio for all of its working capital and financing requirements, as bluebird bio uses a centralized approach to cash management and financing its operations. There were no cash amounts specifically attributable to the Company for the historical periods presented; therefore, cash and cash equivalents have not been allocated to the Company in the condensed combined financial statements. Financing transactions related to bluebird bio are accounted for as a component of net parent investment in the condensed combined balance sheets and as a financing activity on the accompanying condensed combined statements of cash flows.

The Company's condensed combined financial statements include an allocation of expenses related to certain bluebird bio corporate functions, including senior management, legal, human resources, finance and information technology. In addition, the Company's condensed combined financial statements include an allocation of certain research and development costs not directly attributable to individual programs. These expenses have been allocated to the Company based on direct usage or benefit where specifically identifiable, with the remainder allocated based on employee time spent on projects, square footage or other measures that management believes are consistent and reasonable. These allocations may not be indicative of the actual expense that would have been incurred had the Company operated as an independent, publicly traded company for the periods presented. See Note 11, *Related-party transactions*, for a further description of the accounting for the separation from bluebird bio.

The condensed combined balance sheets of the Company include assets and liabilities that were allocated principally on a specific identification basis. As 2seventy bio's operations were not historically held by a single legal entity or separate legal entities, net parent investment is shown in lieu of stockholder's equity in the condensed combined financial statements. Net parent investment represents the cumulative investment by bluebird bio in the Company through the dates presented, inclusive of operating results. Balances between the Company and bluebird bio that were not historically settled in cash are included in net parent investment. All significant transactions between the Company and bluebird bio have been included in the accompanying condensed combined financial statements. Transactions with bluebird bio are reflected in the accompanying condensed combined statements of equity as net transfers from (to) parent and in the accompanying condensed combined balance sheets within net parent investment.

Amounts reported are computed based on thousands, except percentages or as otherwise noted. As a result, certain totals may not sum due to rounding.

Principles of combination

The accompanying condensed combined financial statements include the attribution of certain assets and liabilities that have historically been held by bluebird bio but which are specifically identifiable or attributable to the Company. All intercompany balances and transactions with bluebird bio are deemed to be effectively settled in the condensed combined financial statements at the time the transaction is recorded. Expenses related to corporate allocations from bluebird bio to the Company are considered to be effectively settled for cash in the condensed combined financial statements at the time the transaction is recorded.

The Company continually assesses whether it is the primary beneficiary of a variable interest entity as changes to existing relationships or future transactions may result in consolidation or deconsolidation of one or more collaborators or partners. In determining whether it is the primary beneficiary of an entity in which the Company has a variable interest, management applies a qualitative approach that determines whether the Company has both (1) the power to direct the economically significant activities of the entity and (2) the obligation to absorb losses of, or the right to receive benefits from, the entity that could potentially be significant to that entity.

Use of estimates

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts in the financial statements and accompanying notes. Actual results could materially differ from those estimates. Management considers many factors in selecting appropriate financial accounting policies and controls, and in developing the estimates and assumptions that are used in the preparation of these financial statements. Management must apply significant judgment in this process. In addition, other factors may affect estimates, including: expected business and operational changes, sensitivity and volatility associated with the assumptions used in developing estimates, and whether historical trends are expected to be representative of future trends. The estimation process often may yield a range of potentially reasonable estimates of the ultimate future outcomes and management must select an amount that falls within that range of reasonable estimates. This process may result in actual results differing materially from those estimated amounts used in the preparation of the financial statements.

Estimates and judgments are used in the following areas, among others: allocations of revenue, expenses, assets and liabilities from bluebird bio's historical consolidated financial statements to the Company, future undiscounted cash flows and subsequent fair value estimates used to assess potential and measure any impairment of long-lived assets, including goodwill and intangible assets, the measurement of right-of-use assets and lease liabilities, contingent consideration, stock-based compensation expense, accrued expenses, income taxes, and the assessment of the Company's ability to fund its operations for at least the next twelve months from the date of issuance of these financial statements. In addition, estimates and judgments are used in the Company’s accounting for its revenue-generating arrangements, in particular as it relates to determining the stand-alone selling price of performance obligations, evaluating whether an option to acquire additional goods and services represents a material right, estimating the total transaction price, including estimating variable consideration and the probability of achieving future potential development and regulatory milestones, assessing the period of performance over which revenue may be recognized, and accounting for modifications to revenue-generating arrangements.

Significant accounting policies

The significant accounting policies used in preparation of these condensed combined financial statements for the six months ended June 30, 2021 and 2020 are consistent with those discussed in Note 2 to the combined financial statements for the year ended December 31, 2020, except as noted immediately below and as noted within the "*Recent accounting pronouncements - Recently adopted*" section.

Collaborative arrangement revenue

The Company analyzes its collaboration arrangements to assess whether they are within the scope of ASC 808, *Collaborative Arrangements* ("ASC 808"), which includes determining whether such arrangements involve joint operating activities performed by parties that are both active participants in the activities and exposed to significant risks and rewards dependent on the commercial success of such activities. This assessment is performed throughout

the life of the arrangement based on changes in the responsibilities of all parties in the arrangement. For collaboration arrangements within the scope of ASC 808 that contain multiple elements, the Company first determines which elements of the collaboration are deemed to be within the scope of ASC 808 and those that are more reflective of a vendor-customer relationship and therefore within the scope of ASC 606, *Revenue from Contracts with Customers* ("Topic 606" or "ASC 606"). For elements of collaboration arrangements that are accounted for pursuant to ASC 808, an appropriate recognition method is determined and applied consistently, generally by analogy to Topic 606.

In arrangements where the Company does not deem its collaborator to be its customer, payments to and from its collaborator are presented in the condensed combined statements of operations and comprehensive income (loss) based on the nature of the payments, as summarized in the table and further described below.

Nature of Payment	Statement of Operations Presentation
The Company's share of profits in connection with commercialization of products	Collaborative arrangement revenue
The Company's share of losses in connection with commercialization of products	Share of collaboration loss
Net reimbursement of the Company's research and development expenses	Collaborative arrangement revenue
Net reimbursement of the collaborator's research and development expenses	Research and development expense

Where the collaborator is the principal in the product sales, the Company recognizes its share of any profits or losses, representing net product sales less cost of goods sold and shared commercial and other expenses, in the period in which such underlying sales occur and costs are incurred by the collaborator. The Company also recognizes its share of costs arising from research and development activities performed by collaborators in the period its collaborators incur such expenses.

Recent accounting pronouncements

Recently adopted

ASU No. 2019-12, Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes

In December 2019, the FASB issued ASU 2019-12, *Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes* ("ASU 2019-12"), which is intended to simplify the accounting for income taxes. ASU 2019-12 removes certain exceptions to the general principles in Topic 740 and also clarifies and amends existing guidance to improve consistent application. The new standard was effective beginning January 1, 2021. The adoption of ASU 2019-12 did not have a material impact on the Company's financial position or results of operations upon adoption.

ASU No. 2020-06, Debt—Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging—Contracts in Entity's Own Equity (Subtopic 815-40): Accounting for Convertible Instruments and Contracts in an Entity's Own Equity

In August 2020, the FASB issued ASU 2020-06, *Debt—Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging—Contracts in Entity's Own Equity (Subtopic 815-40): Accounting for Convertible Instruments and Contracts in an Entity's Own Equity* ("ASU 2020-06"). ASU 2020-06 simplifies the complexity associated with applying U.S. GAAP for certain financial instruments with characteristics of liabilities and equity. More specifically, the amendments focus on the guidance for convertible instruments and derivative scope exception for contracts in an entity's own equity. The Company early adopted the new standard, effective January 1, 2021. The adoption of ASU 2020-06 did not have an impact on the Company's financial position or results of operations upon adoption.

ASU No. 2020-08, Codification Improvements to Subtopic 310-20, Receivables - Nonrefundable Fees and Other Costs

In October 2020, the FASB issued ASU 2020-08, *Codification Improvements to Subtopic 310-20, Receivables - Nonrefundable Fees and Other Costs* ("ASU 2020-08") to provide further clarification and update the previously

issued guidance in ASU 2017-08, *Receivables - Nonrefundable Fees and Other Costs (Subtopic 310-20: Premium Amortization on Purchased Callable Debt Securities)* (“ASU 2017-08”). ASU 2017-08 shortened the amortization period for certain callable debt securities purchased at a premium by requiring that the premium be amortized to the earliest call date. ASU 2020-08 requires that at each reporting period, to the extent that the amortized cost of an individual callable debt security exceeds the amount repayable by the issuer at the next call date, the excess premium shall be amortized to the next call date. The new standard was effective beginning January 1, 2021. The adoption of ASU 2020-08 did not have a material impact on the Company's financial position or results of operations upon adoption.

ASU No. 2020-10, Codification Improvements

In October 2020, the FASB issued ASU 2020-10, *Codification Improvements* ("ASU 2020-10"). The amendments in this ASU represent changes to clarify the ASC, correct unintended application of the guidance, or make minor improvements to the ASC that are not expected to have a significant effect on current accounting practice or create a significant administrative cost to most entities. This new standard was effective beginning January 1, 2021. The adoption of ASU 2020-10 did not have a material impact on the Company's financial position or results of operations upon adoption.

3. Fair value measurements

The following table sets forth the Company’s assets and liabilities that are measured at fair value on a recurring basis as of June 30, 2021 and December 31, 2020 (in thousands):

	Total	Quoted prices in active markets (Level 1)	Significant other observable inputs (Level 2)	Significant unobservable inputs (Level 3)
June 30, 2021				
Liabilities:				
Contingent consideration	$ 1,925	$ —	$ —	$ 1,925
Total liabilities	$ 1,925	$ —	$ —	$ 1,925
December 31, 2020				
Liabilities:				
Contingent consideration	$ 1,509	$ —	$ —	$ 1,509
Total liabilities	$ 1,509	$ —	$ —	$ 1,509

As of June 30, 2021 and December 31, 2020, the Company did not have any assets that are measured at fair value on a recurring basis.

Contingent consideration

In connection with bluebird bio's prior acquisition of Precision Genome Engineering, Inc. (“Pregenen”), the Company may be required to pay future consideration that is contingent upon the achievement of specified development milestone events or sales-based milestone events. Contingent consideration is measured at fair value and is based on significant unobservable inputs, which represents a Level 3 measurement within the fair value hierarchy. The valuation of contingent consideration uses assumptions the Company believes would be made by a market participant. The Company assesses these estimates on an on-going basis as additional data impacting the assumptions is obtained. Future changes in the fair value of contingent consideration related to updated assumptions and estimates are recognized within the condensed combined statements of operations and comprehensive income (loss). In the absence of new information related to the probability of milestone achievement, changes in fair value will reflect changing discount rates and the passage of time. Contingent consideration is included in other non-current liabilities on the condensed combined balance sheets.

The table below provides a roll-forward of fair value of the Company's contingent consideration obligations that include Level 3 inputs (in thousands):

	Six months ended June 30,	
	2021	2020
Beginning balance	$ 1,509	$ 7,977
Additions	—	—
Changes in fair value	416	(4,763)
Payments	—	—
Ending balance	$ 1,925	$ 3,214

Please refer to Note 7, *Commitments and contingencies*, for further information.

4. Property, plant and equipment, net

Property, plant and equipment, net, consists of the following (in thousands):

	As of June 30, 2021	As of December 31, 2020
Land	$ 1,210	$ 1,210
Building	88,943	15,745
Computer equipment and software	6,471	6,503
Office equipment	6,724	6,588
Laboratory equipment	34,816	24,080
Leasehold improvements	28,098	28,305
Construction-in-progress	14,639	91,631
Total property, plant and equipment	180,901	174,062
Less accumulated depreciation and amortization	(36,046)	(30,037)
Property, plant and equipment, net	$ 144,855	$ 144,025

Depreciation and amortization expense related to property, plant and equipment was $6.1 million and $4.7 million for the six months ended June 30, 2021 and 2020, respectively.

North Carolina manufacturing facility

In November 2017, bluebird bio acquired a manufacturing facility in Durham, North Carolina for the future manufacture of lentiviral vectors for the Company's gene therapies. This manufacturing facility is fully dedicated to the Company's operations and, accordingly, prior to the sale of the facility as described below, was to be attributed to the Company in connection with the separation. As of June 30, 2021, the majority of the facility has been placed into service. The remainder of the facility is still in process of qualification, which is required for the facility to be ready for its intended use. Construction-in-progress as of June 30, 2021 and December 31, 2020 includes $14.1 million and $91.1 million, respectively, related to the North Carolina manufacturing facility.

In July 2021, bluebird bio and National Resilience, Inc. ("Resilience") announced a strategic manufacturing collaboration aimed to accelerate the early research, development, and delivery of cell therapies. As part of the agreement, Resilience will acquire bluebird bio's manufacturing facility upon closing. Please refer to Note 13, *Subsequent events*, for further discussion of the arrangement.

5. Accrued expenses and other current liabilities

Accrued expenses and other current liabilities consist of the following (in thousands):

	As of June 30, 2021	As of December 31, 2020
Employee compensation	$ 22,737	$ 9,451
Manufacturing costs	7,238	6,808
Clinical and contract research organization costs	2,473	2,854
Collaboration research costs	20,667	19,605
Property, plant, and equipment	1,039	440
License and milestone fees	183	278
Other	7,288	3,911
Total accrued expenses and other current liabilities	$ 61,625	$ 43,347

6. Leases

bluebird bio leases certain office and laboratory space that will be attributed to the Company in connection with the separation. There have been no material changes to the lease obligations from those disclosed in Note 6, *Leases*, to the annual combined financial statements.

7. Commitments and contingencies

Contingent consideration related to business combinations

On June 30, 2014, bluebird bio acquired Pregenen. All assets and liabilities related to the Pregenen acquisition, including the resulting goodwill and contingent consideration, will be attributed to the Company in connection with the separation. As of June 30, 2021, the Company may be required to make up to $99.9 million in contingent cash payments to the former equityholders of Pregenen upon the achievement of certain commercial milestones related to the Pregenen technology. In accordance with accounting guidance for business combinations, contingent consideration liabilities are required to be recognized on the condensed combined balance sheets at fair value. Estimating the fair value of contingent consideration requires the use of significant assumptions primarily relating to probabilities of successful achievement of certain clinical and commercial milestones, the expected timing in which these milestones will be achieved and discount rates. The use of different assumptions could result in materially different estimates of fair value.

Other funding commitments

bluebird bio is party to various agreements, principally relating to licensed technology, certain of which will be attributed to the Company in connection with the separation, that require future payments relating to milestones that may be met in subsequent periods or royalties on future sales of specified products. Additionally, to the extent an agreement relating to licensed technology is not attributed to the Company, bluebird bio may enter into a sublicense with the Company, which may require future milestone and/or royalty payments. These agreements include the collaboration agreements entered into with BMS and Regeneron Pharmaceuticals, Inc. ("Regeneron"). Please refer to Note 8, *Collaborative arrangements*, for further information on the BMS and Regeneron agreements.

Based on the Company's development plans as of June 30, 2021, the Company may be obligated to make future development, regulatory and commercial milestone payments and royalty payments on future sales of specified products. Payments under these agreements generally become due and payable upon achievement of such milestones or sales. When the achievement of these milestones or sales has not occurred, such contingencies are not recorded in the Company’s financial statements. As further discussed in Note 8, *Collaborative arrangements*, BMS assumed responsibility for amounts due to licensors as a result of any future ex-U.S. sales of ABECMA® and bb21217.

Additionally, bluebird bio is party to various contracts with contract research organizations and contract manufacturers that generally provide for termination on notice, with the exact amounts in the event of termination to

be based on the timing of the termination and the terms of the agreement. There have been no material changes in future minimum purchase commitments from those disclosed in Note 7, *Commitments and Contingencies*, to the annual combined financial statements.

Litigation

From time to time, bluebird bio has been and the Company expects to be party to various claims and complaints arising in the ordinary course of business, including securities class action litigation. bluebird bio has entered into, and the Company expects to enter into, standard indemnification agreements in the ordinary course of business. Pursuant to these agreements, bluebird bio indemnifies, holds harmless, and agrees to reimburse the indemnified party for losses suffered or incurred by the indemnified party, generally bluebird bio's business partners. Pursuant to the separation agreement, the Company expects to indemnify, hold harmless, and agree to reimburse bluebird bio for its indemnification obligations with respect to the Company's business partners, relating to the Company's business or arising out of the Company's activities, in the past or to be conducted in the future. The term of these indemnification agreements is generally perpetual any time after execution of the agreement. The maximum potential amount of future payments bluebird bio or the Company could be required to make under these indemnification agreements is unlimited. Management does not believe that any ultimate liability resulting from any such claims or indemnification agreements will have a material adverse effect on its results of operations, financial position, or liquidity. However, management cannot give any assurance regarding the ultimate outcome of any claims, and their resolution could be material to operating results for any particular period.

Following the separation, the Company will indemnify each of its directors and officers for certain events or occurrences, subject to certain limits, while the officer or director is or was serving at the Company's request in such capacity, as permitted under Delaware law and in accordance with its certificate of incorporation and by-laws. The term of the indemnification period will last as long as a director or officer may be subject to any proceeding arising out of acts or omissions of such director or officer in such capacity. The maximum amount of potential future indemnification is unlimited; however, the Company expects to hold director and officer liability insurance following the separation.

8. Collaborative arrangements

To date, the Company's service and collaborative arrangement revenue has been primarily generated from collaboration arrangements with BMS and Regeneron, each as further described below. These agreements will be attributed to the Company in connection with the separation.

Bristol-Myers Squibb

BMS Original Collaboration Agreement

In March 2013, bluebird bio entered into a collaboration agreement with BMS. The details of the collaboration agreements and the payments the Company has received, and is entitled to receive, are further described in Note 8, *Collaborative arrangements*, to the annual combined financial statements. During the six months ended June 30, 2021, there have been no changes to the terms of the collaboration agreement with BMS.

Ide-cel

Under the collaboration agreement with BMS, the Company shares equally in the profit and loss related to the development and commercialization of ide-cel in the United States. The Company has no remaining financial rights with respect to the development or commercialization of ide-cel outside of the United States. The Company accounts for its collaborative arrangement efforts with BMS in the United States within the scope of ASC 808 given that both parties are active participants in the activities and both parties are exposed to significant risks and rewards dependent on the commercial success of the activities. The Company recognizes revenue related to the combined unit of accounting for the ex-U.S. license and lentiviral vector manufacturing services under Topic 606.

Ide-cel U.S. Share of Collaboration Profit or Loss

In March 2021, BMS received marketing approval from the U.S. Food and Drug Administration for ide-cel as a treatment for adult patients with relapsed or refractory multiple myeloma after four or more prior lines of therapy, including an immunomodulatory agent, a proteasome inhibitor, and an anti-CD38 monoclonal antibody. BMS is primarily responsible for the commercialization of ide-cel and they are the principal for commercial activity. On a quarterly basis, the Company determines its share of collaboration profit or loss for commercial activities. The Company's share of any collaboration profit for commercial activities is recognized as collaborative arrangement revenue and its share of any collaboration loss for commercial activity is recognized as an operating expense and classified as share of collaboration loss on the Company's condensed combined statement of operations and comprehensive income (loss). The Company also is responsible for equally sharing in the ongoing ide-cel research and development activities being conducted by BMS in the United States. The net amount owed to BMS for research and development activities is classified as research and development expense on the condensed combined statement of operations and comprehensive income (loss). If BMS is obligated to reimburse the Company because the Company's research and development costs exceeds BMS' research and development costs, the net amount is recorded as collaborative arrangement revenue.

During the six months ended June 30, 2021, the Company recognized $10.1 million, included as a component of share of collaboration loss on the condensed combined statement of operations and comprehensive income (loss), related to its share of collaboration loss associated with ide-cel commercial activities. This amount includes the Company's share of BMS' ide-cel product revenue, cost of goods sold, and selling costs, offset by any reimbursement of commercial costs incurred by the Company during the six-month period.

The following table summarizes the amounts associated with the research activities under the collaboration included in research and development expense or recognized as collaborative arrangement revenue for the six months ended June 30, 2021, and 2020 (in thousands):

	For the six months ended June 30,	
	2021	2020
ASC 808 ide-cel research and development revenue - U.S. [1][2]	$ —	$ 108,196
ASC 808 ide-cel research and development expense - U.S. [1]	$ (26,018)	$ (5,080)

(1) The calculation of collaborative arrangement activity to be recognized for joint ide-cel efforts in the United States is performed on a quarterly basis. The calculation is independent of previous activity, which may result in fluctuations between revenue and expense recognition period over period, depending on the varying extent of effort performed by each party during the period.

(2) In the second quarter of 2020, the Company recognized $169.2 million as a cumulative catch-up adjustment to revenue recorded in connection with the May 2020 First Amendment to the Amended and Restated Co-Development, Co-Promote and Profit Share Agreement ("Amended Ide-cel CCPS"), a portion of which was recognized as ASC 808 research and development collaboration revenue. Refer to Note 8, *Collaborative arrangements*, to the annual combined financial statements for further discussion on the Amended Ide-cel CCPS.

Ide-cel ex-U.S. Service Revenue

The following table summarizes the revenue recognized related to ide-cel ex-U.S. activities for the six months ended June 30, 2021, and 2020 (in thousands):

	For the six months ended June 30,	
	2021	2020
ASC 606 ide-cel license and manufacturing revenue - ex-U.S. [1]	$ 9,384	$ 87,820

(1) In the second quarter of 2020, the Company recognized $169.2 million as a cumulative catch-up adjustment to revenue recorded in connection with the Amended Ide-cel CCPS, a portion of which was recognized as ASC 606 license and manufacturing revenue. Refer to Note 8, *Collaborative arrangements*, to the annual combined financial statements for further discussion on the Amended Ide-cel CCPS.

bb21217

In addition to the activities related to ide-cel, BMS previously exercised its option to obtain an exclusive worldwide license to develop and commercialize bb21217, the second product candidate under the collaboration

arrangement with BMS which is further described in Note 8, *Collaborative arrangements*, to the annual combined financial statements.

Under the collaboration arrangement with BMS, the Company has an option to co-develop and co-promote bb21217 within the United States. The Company currently expects it will exercise its option to co-develop and co-promote bb21217 within the United States. The Company's election to co-develop and co-promote bb21217 within the United States must be made by the substantial completion of CRB-402, the on-going phase 1 clinical trial of bb21217. If elected, the Company expects the responsibilities of the parties to remain largely unchanged, however, the Company expects it would share equally in all profits and losses relating to developing, commercializing and manufacturing bb21217 within the United States and have the right to participate in the development and promotion of bb21217 within the United States. Under this scenario, the U.S. milestones and royalties payable would be adjusted and the Company would be eligible to receive a $10.0 million development milestone payment related to the development of bb21217 within the United States. The Company would not be eligible for royalties on U.S. sales of bb21217 under this scenario.

In the event the Company does not exercise its option to co-develop and co-promote bb21217, the Company will receive an additional fee in the amount of $10.0 million. Under this scenario, the Company is eligible to receive U.S. milestones of up to $85.0 million for the first indication to be addressed by bb21217 and royalties for U.S. sales of bb21217.

All of the remaining development, regulatory, and commercial milestones related to U.S. development, regulatory and commercialization activities are fully constrained and are therefore excluded from the transaction price. As part of its evaluation of the constraint, the Company considered numerous factors, including the fact that achievement of the milestones is outside the control of the Company and contingent upon the future success of its clinical trials, the licensee's efforts, or the receipt of regulatory approval. Any consideration related to U.S. sales-based milestones (including royalties) will be recognized when the related sales occur as these amounts have been determined to relate predominantly to the license granted to BMS and therefore are recognized at the later of when the performance obligation is satisfied or the related sales occur.

The transaction price associated with the collaboration arrangement consists of $31.0 million of upfront payments and option payments received from BMS and $1.8 million in variable consideration which represents reimbursement to be received from BMS for manufacturing vector and associated payloads through development. The Company has identified two performance obligations with respect to the arrangement with BMS. The initial performance obligation was for research and development services that were substantially completed in September 2019, associated with the initial phase 1 clinical trial of bb21217. The Company allocated $5.4 million of consideration to the research and development services performance obligation and fully recognized the consideration through September 2019. The other performance obligation relates to a combined performance obligation for the bb21217 license and vector manufacturing services through development, and the remaining $27.3 million in consideration was allocated to this combined performance obligation. The Company will satisfy this combined performance obligation as the bb21217 manufacturing services are performed. As of June 30, 2021, the Company has not commenced manufacturing and the full amount of the allocated transaction price remains unsatisfied.

The Company re-evaluates the transaction price, including the estimated variable consideration included in the transaction price and all constrained amounts, each reporting period and as uncertain events are resolved or other changes in circumstances occur.

Contract assets and liabilities – ide-cel and bb21217

The Company receives payments from its collaborative partners based on billing schedules established in each contract. Up-front payments and fees are recorded as deferred revenue upon receipt or when due until such time as the Company satisfies its performance obligations under these arrangements. A contract asset is a conditional right to consideration in exchange for goods or services that the Company has transferred to a customer. Amounts are recorded as accounts receivable when the Company's right to consideration is unconditional.

The following table presents changes in the balances of the Company's BMS receivables and contract liabilities during the six months ended June 30, 2021 (in thousands):

	Balance at December 31, 2020	Additions	Deductions	Balance at June 30, 2021
Receivables	$ 400	$ —	$ (400)	$ —
Contract liabilities:				
Deferred revenue	$ 26,582	$ —	$ (820)	$ 25,762

The decrease in the receivables balance for the six months ended June 30, 2021 is driven by amounts collected from BMS in the period.

The decrease in deferred revenue during the six months ended June 30, 2021 is driven by the release of the remaining $0.8 million of deferred revenue associated with the combined performance obligation consisting of the ide-cel license and manufacturing services.

Regeneron

Regeneron Collaboration Agreement

In August 2018, bluebird bio entered into a Collaboration Agreement (the "Regeneron Collaboration Agreement") with Regeneron pursuant to which the parties will apply their respective technology platforms to the discovery, development, and commercialization of novel immune cell therapies for cancer. In August 2018, following the completion of required regulatory reviews, the Regeneron Collaboration Agreement became effective. As noted above, the agreement will be attributed to the Company in connection with the separation. Under the terms of the agreement, the parties will leverage Regeneron's proprietary platform technologies for the discovery and characterization of fully human antibodies, as well as T cell receptors directed against tumor-specific proteins and peptides and the Company will contribute its field-leading expertise in gene therapy.

In accordance with the Regeneron Collaboration Agreement, the parties jointly selected six initial targets and intend to equally share the costs of research up to the point of submitting an IND application for a potential gene therapy product directed to a particular target. Additional targets may be selected to add to or replace any of the initial targets during the five-year research collaboration term as agreed to by the parties.

Regeneron will accrue a certain number of option rights exercisable against targets as the parties reach certain milestones under the terms of the agreement. Upon the acceptance of an IND for the first product candidate directed to a target, Regeneron will have the right to exercise an option for co-development/co-commercialization of product candidates directed to such target on a worldwide or applicable opt-in territory basis, with certain exceptions. Where Regeneron chooses to opt-in, the parties will share equally in the costs of development and commercialization and will share equally in any profits or losses therefrom in applicable opt-in territories. Outside of the applicable opt-in territories, the target becomes a licensed target and Regeneron would be eligible to receive, with respect to any resulting product, milestone payments of up to $130.0 million per product and royalties on net sales outside of the applicable opt-in territories at a rate ranging from the mid-single digits to low-double digits. A target would also become a licensed target in the event Regeneron does not have an option to such target, or Regeneron does not exercise its option with respect to such target.

Either party may terminate a given research program directed to a particular target for convenience, and the other party may elect to continue such research program at its expense, receiving applicable cross-licenses. The terminating party will receive licensed product royalties and milestone payments on the potential applicable gene therapy products. Where the Company terminates a given research program for convenience, and Regeneron elects to continue such research program, the parties will enter into a transitional services agreement. Under certain conditions, following its opt-in, Regeneron may terminate a given collaboration program and the Company may elect to continue the development and commercialization of the applicable potential gene therapy products as licensed products.

Regeneron Share Purchase Agreement

A Share Purchase Agreement ("SPA") was entered into by bluebird bio and Regeneron in August 2018. In August 2018, on the closing date of the transaction, bluebird bio issued Regeneron 0.4 million shares of bluebird bio's common stock, subject to certain restrictions, for $238.10 per share, or $100.0 million in the aggregate. The purchase price represents $63.0 million worth of common stock plus a $37.0 million premium, which represents a collaboration research advancement, or credit to be applied to Regeneron's initial 50 percent funding obligation for collaboration research, after which the collaborators will continue to fund ongoing research equally. The collaboration research advancement only applies to pre-IND research activities and is not refundable or creditable against post-IND research activities for any programs where Regeneron exercises its opt-in rights.

Accounting analysis – Regeneron

At the commencement of the arrangement, two units of accounting were identified, which are the issuance of 0.4 million shares of bluebird bio's common stock and joint research activities during the five-year research collaboration term. The Company determined the total transaction price to be $100.0 million, which comprises $54.5 million attributed to the bluebird bio equity sold to Regeneron and $45.5 million attributed to the joint research activities. In determining the fair value of the bluebird bio common stock at closing, the Company considered the closing price of the bluebird bio common stock on the closing date of the transaction and included a lack of marketability discount because Regeneron received shares subject to certain restrictions.

The Company analyzed the joint research activities to assess whether they fall within the scope of ASC 808, and will reassess this throughout the life of the arrangement based on changes in the roles and responsibilities of the parties. Based on the terms of the arrangement as outlined above, for the collaboration research performed prior to submission of an IND application for a potential gene therapy product, both parties are deemed to be active participants in the collaboration. Both parties are performing research and development activities and will share equally in these costs through IND. Additionally, Regeneron and the Company are exposed to significant risks and rewards dependent on the commercial success of any product candidates that may result from the collaboration. As such, the collaboration arrangement is deemed to be within the scope of ASC 808.

The $45.5 million attributed to the joint research activities includes the $37.0 million creditable against amounts owed to the Company by Regeneron. The collaboration research advancement will be reduced over time for amounts due to the Company by Regeneron as a result of the parties agreeing to share in the costs of collaboration research equally. The remainder of the amount attributed to the joint research activities will be recognized over the five-year research collaboration term.

Consistent with its collaboration accounting policy, the Company will recognize collaborative arrangement revenue or research and development expense related to the joint research activities in future periods depending on the amounts incurred by each party in a given reporting period. That is, if the Company's research costs incurred exceed those research costs incurred by Regeneron in a given quarter, the Company will record collaborative arrangement revenue and reduce the original $37.0 million advance by the amount due from Regeneron until such advancement is fully utilized, after which the Company would record an amount due from Regeneron. If Regeneron's research costs incurred exceed those research costs incurred by the Company in a given quarter, the Company will record research and development expense and record a liability for the amount due to Regeneron. As of June 30, 2021 and December 31, 2020, the Company has $27.6 million and $30.8 million, respectively, of the amount attributed to the joint research activities remaining to be recognized, which is classified as collaboration research advancement, current portion and collaboration research advancement, net of current portion on the condensed combined balance sheets.

The Company recognized $3.2 million and $3.8 million of collaborative arrangement revenue from the Regeneron Collaboration Agreement during the six months ended June 30, 2021 and 2020, respectively.

9. Royalty and other revenue

bluebird bio has out-licensed intellectual property to various third parties. Under the terms of these agreements, some of which will be attributed to the Company in connection with the separation, bluebird bio may be entitled to royalties and milestone payments.

Novartis Pharma AG

In April 2017, bluebird bio entered into a worldwide license agreement with Novartis, which is further described in Note 9, *Royalty and other revenue*, to the annual combined financial statements. Under the terms of the agreement, Novartis non-exclusively licensed certain patent rights related to lentiviral vector technology to develop and commercialize CAR T cell therapies for oncology, including Kymriah (formerly known as CTL19), Novartis's anti-CD19 CAR T therapy. The agreement will be attributed to the Company in connection with the separation. Beginning in the fourth quarter of 2017, the Company began recognizing royalty revenue from sales of tisagenlecleucel under the agreement. This license agreement was terminated effective March 2021, at which point in time Novartis was no longer required to pay the Company royalty or other payments on net sales of tisagenlecleucel or any future products. The Company recognized $2.3 million and $6.1 million of royalty revenue in the six months ended June 30, 2021 and 2020, respectively, from sales of tisagenlecleucel that are included within royalty and other revenue in the condensed combined statement of operations and comprehensive income (loss).

Juno Therapeutics

In May 2020, bluebird bio entered into a non-exclusive license agreement with Juno Therapeutics, Inc. ("Juno"), a wholly-owned subsidiary of BMS, related to lentiviral vector technology to develop and commercialize CD-19-directed CAR T cell therapies. The agreement will be attributed to the Company in connection with the separation. Upon regulatory approval of lisocabtagene maraleucel during the first quarter of 2021, bluebird bio received a $2.5 million milestone payment from Juno, which is included within royalty and other revenue in the Company's condensed combined financial statements. Royalty revenue recognized from sales of lisocabtagene maraleucel is also included within royalty and other revenue in the condensed combined statement of operations and comprehensive income (loss).

10. Stock-based compensation

During the first quarter of 2021, bluebird bio implemented a retention program designed to incentivize and retain employees through the separation of its severe genetic disease and oncology programs, which is intended to occur by the end of 2021. Under the retention program, employees are entitled to a one-time bonus payment, consisting of both a cash payment and unrestricted stock awards, with the condition that the employee remains employed at the end of 2021.

All awards granted under bluebird bio's equity plans consist of shares of bluebird bio's common stock. Accordingly, the amounts presented are not necessarily indicative of future stock-based compensation and do not necessarily reflect the amounts that the Company would have recorded as an independent, publicly traded company for the periods presented.

Stock-based compensation expense

Stock-based compensation expense was allocated to the Company using a combination of specific identification and time spent on projects at various levels of the organization, which management believes are consistent and reasonable.

Stock-based compensation expense under bluebird bio's stock option and incentive plans allocated to the Company by classification included within the condensed combined statements of operations and comprehensive income (loss) was as follows (in thousands):

	Six months ended June 30,	
	2021	2020
Research and development	$ 16,906	$ 16,849
Selling, general and administrative	12,171	16,454
	$ 29,077	$ 33,303

11. Related-party transactions

Historically, the Company has been managed and operated in the normal course of business under bluebird bio. Accordingly, certain shared costs have been allocated to the Company and reflected as expenses in the Company's stand-alone condensed combined financial statements. The expenses reflected in the condensed combined financial statements may not be indicative of expenses that will be incurred by the Company in the future.

Corporate allocations

The condensed combined financial statements reflect allocations of certain expenses from bluebird bio, including, but not limited to, general corporate expenses, such as senior management, legal, human resources, accounting, other financial services (such as treasury, audit and purchasing), tax, information technology, and corporate employee benefits, incentives and stock-based compensation included within selling, general and administrative expense.

These expenses have been allocated to the Company based on direct usage or benefit where specifically identifiable, with the remainder allocated based on employee time spent on projects, square footage or other measures that management believes are consistent and reasonable. Allocations for management costs and corporate support services provided to the Company totaled $35.3 million and $40.3 million for the six months ended June 30, 2021 and 2020, respectively.

The financial information in these condensed combined financial statements does not necessarily include all the expenses that would have been incurred by the Company had it been a separate, stand-alone entity. Actual costs that may have been incurred if the Company had been a stand-alone company would depend on a number of factors, including the chosen organization structure and functions outsourced or performed by employees. See Note 2, *Summary of significant accounting policies and basis of presentation*, for additional information on the preparation and basis of presentation of these condensed combined financial statements, including the treatment of certain research and development costs not directly attributable to individual programs.

Usage of the Company's assets by bluebird bio and of bluebird bio's assets by the Company

Certain assets have been reflected in these condensed combined financial statements as the underlying assets will be attributed to the Company; however, bluebird bio has historically utilized a portion of the underlying asset as part of its operations. Accordingly, the expense related to the underlying asset has been reflected in the condensed combined financial statements. The Company has also recorded an imputed charge to bluebird bio to reflect the cost of bluebird bio's proportional usage. In addition, the Company has recorded as an expense an imputed charge to reflect the cost of the Company's proportional usage of certain underlying assets not reflected in the condensed combined financial statements but for which the Company has historically utilized a portion of the underlying asset

as part of its operations. The income and expense recognized by the Company resulting from these imputed charges is recorded as other income, net in the condensed combined financial statements and was as follows (in thousands):

	Six months ended June 30,	
	2021	2020
Imputed charge to bluebird bio for leases	$ 8,921	$ 8,325
Imputed charge from bluebird bio for leases	(627)	(453)
Imputed charge to bluebird bio for property, plant and equipment	1,206	1,124
Imputed charge from bluebird bio for property, plant and equipment	(1,112)	(117)
Imputed charge to bluebird bio for intangible assets	73	116
Other	(1)	24
	$ 8,460	$ 9,019

Other components of other income, net, that are not shown in the table above primarily include immaterial rental income and gains and losses on disposals of fixed assets.

Stock-based compensation

As discussed in Note 10, *Stock-based compensation*, 2seventy bio's employees participate in bluebird bio's stock-based compensation plans, the costs of which have been allocated to 2seventy bio and recorded in research and development and selling, general and administrative expenses in the condensed combined statements of operations and comprehensive income (loss).

Retirement plans

2seventy bio's employees participate in bluebird bio's 401(k) Savings plan, the costs of which have been allocated to 2seventy bio and recorded in research and development and selling, general and administrative expenses in the condensed combined statements of operations and comprehensive income (loss).

Transaction costs

As of June 30, 2021, bluebird bio had incurred costs related to the separation of the Company. To the extent separation costs are incurred that will directly benefit the Company as a stand-alone company, such costs will be allocated to the Company.

Centralized cash management

No separate cash accounts for 2seventy bio were historically maintained and, therefore, bluebird bio is presumed to have funded 2seventy bio's operating, investing and financing activities as necessary. As cash is disbursed and received by bluebird bio, for purposes of the condensed combined financial statements, funding of 2seventy bio's expenditures is reflected in the condensed combined financial statements as a component of net parent investment.

12. Income taxes

Deferred taxes are recognized for temporary differences between the basis of assets and liabilities for financial statement and income tax purposes.

A valuation allowance is recorded against deferred tax assets if it is more likely than not that some or all of the deferred tax assets will not be realized. Due to the uncertainty surrounding the realization of the favorable tax attributes in future tax returns, the Company has recorded a full valuation allowance against the Company's otherwise recognizable net deferred tax assets.

The Company did not operate as a stand-alone entity (or group of entities) in the past and, accordingly, the amount and composition of its tax losses, credits, and other deferred tax assets included in the condensed combined financial statements may change as the result of the Company's separation from bluebird bio.

In March 2020, the Coronavirus Aid, Relief and Economic Security Act ("CARES Act") was enacted. This law temporarily suspends and adjusts certain law changes enacted in the Tax Cuts and Jobs Act in 2017. In December 2020, the Consolidated Appropriations Act was enacted. This law modified the employee retention credit under the CARES Act and created credit extenders for certain credits. The Company has concluded that the provisions in the CARES Act and Consolidated Appropriations Act have an immaterial impact on the Company's income tax expense due to its cumulative losses and full valuation allowance position.

13. Subsequent events

The Company has assessed subsequent events through September 9, 2021, the date the interim financial statements were available to be issued.

In July 2021, bluebird bio and Resilience announced a strategic manufacturing collaboration aimed to accelerate the early research, development, and delivery of cell therapies. As part of the agreement, Resilience will acquire bluebird bio's manufacturing facility located in Durham, North Carolina upon closing, and is expected to retain all staff currently employed at the site. Certain assets and operations related to the manufacturing facility are reflected in these condensed combined financial statements as they were to be attributed to the Company in connection with the separation. Following closing, Resilience is expected to continue to support vector supply for both bluebird bio and the Company upon the closing of the separation, which is expected by the end of 2021.

2seventy bio Completes Spin Transaction and Launches Innovative Immuno-oncology Cell Therapy Company

– ABECMA - first ever approved multiple myeloma CAR T cell therapy leading the way -
– Two innovative bNHL and AML Phase 1 clinical studies planned to begin in 2022 -
– Robust product engine and pipeline of cell therapy candidates in liquid and solid tumors -
– Mature end-to-end cell therapy development capabilities and experience -
– Trading of TSVT to begin on Nasdaq tomorrow, November 5 -

CAMBRIDGE, Mass. – **November 4, 2021** – 2seventy bio, Inc., (NASDAQ: TSVT), an emerging immuno-oncology company today announced its official launch as an independent, publicly traded company. 2seventy bio will trade on the Nasdaq Global Select Market, commencing tomorrow, November 5 under the ticker symbol "TSVT."

"We've done the intense work to reach the start line and we are extremely excited to officially introduce 2seventy bio. 2seventy was created from an unrelenting desire to find new ways to outmaneuver cancer and give more time to the people we serve," said Nick Leschly, chief kairos* officer, 2seventy bio. "Our organization is ready: from our bold and seasoned team to our deep scientific expertise and our strong financial foundation. Our commitment is to sustain the energy, passion and rigor that we have today as we establish the leading immuno-oncology cell therapy company with an aim to deliver transformative treatment options to people living with a range of difficult to treat cancers."

The company officially separates today from bluebird bio, Inc. and launches with a robust cell therapy pipeline across a range of hematologic and solid tumors including two candidates that are planned to enter the clinic in the first half of 2022. The portfolio also includes a development and 50/50 U.S. commercialization partnership with Bristol Myers Squibb (BMS) for ABECMA, a first-in-class, BCMA-directed CAR T cell immunotherapy for multiple myeloma approved in the U.S.

Unique Scientific Approach to Cell Therapy
"Our differentiated cell therapy platform is built around the goal of delivering therapies that provide significant benefit to people living with cancer," said Philip Gregory, chief scientific officer, 2seventy bio. "We begin with the foundational understanding that autologous CAR T cell therapy *work*, yet there's room to build and improve. We identify the unmet medical need, and we strive to understand where there are unique opportunities to change the path of disease. We then undertake a deliberate process to devise an engineered solution that relies on the robust toolbox of targeting, signaling, and enhancement technologies that we have established through our extensive experience and partnerships across industry and academia. Importantly, we are uniquely positioned to deliver these therapies to patients through a development strategy that is designed to efficiently test our hypotheses and quickly deliver answers not only for a given program, but across the technologies. By taking this approach, we're able to apply learnings across the platform in rapid succession."

2seventy bio's cell therapy pipeline includes approaches to hematologic malignancies and solid tumors, including two clinical studies expected to be initiated in the first half of 2022:

- **Multiple Myeloma (MM):**
  - **ABECMA (idecabtagene vicleucel; ide-cel):** ABECMA, a first-in-class, B-cell maturation antigen (BCMA)-directed CAR-T cell immunotherapy approved in the U.S. for the treatment of adult patients with relapsed or refractory multiple myeloma after four or more prior lines of therapy, including an immunomodulatory agent, a proteasome inhibitor, and an anti-CD38 monoclonal antibody, is being jointly developed and

commercialized with BMS in the U.S.[1] ABECMA generated $67 million in U.S. sales in 3Q21, its first full quarter of launch and 2seventy bio and BMS are pursuing additional clinical studies in earlier lines of treatment for patients with MM.
    - **bb21217:** Data from the ongoing Phase 1 study of bb21217, a BCMA-directed CART cell therapy in patients with relapsed and refractory MM that uses the ide-cel CAR molecule and is cultured with a PI3 kinase inhibitor (bb007) to enrich for T cells displaying a memory-like phenotype with the intention to increase the in vivo persistence of CAR T cells, to be presented by the end of 2021.
    - **Next-generation:** In addition, the company is exploring a next-generation approach that utilizes the experience applying the first commercial CAR T cell in MM to aid the design of a novel autologous T cell approach.
- **Acute Myeloid Leukemia (AML)/SC-DARIC 33:** The initiation of an upcoming Phase 1 study of SC-DARIC33 in relapsed/refractory pediatric and young adult AML in collaboration with Seattle Children's Therapeutics will be a first-in-human investigation of 2seventy bio's proprietary Dimerizing Agent Regulated Immunoreceptor Complex (DARIC) T cell platform.
- **B-cell non-Hodgkins Lymphoma(bNHL)/bbT369:** The initiation of an upcoming Phase 1 dose-escalation study in patients with relapsed and refractory bNHL will be a proof-of-concept study of 2seventy bio's proprietary gene editing platform, dual-targeting strategies and split co-stimulation signaling technology
- **Solid Tumors:** Pre-clinical studies are underway utilizing 2seventy bio's diversified and innovative toolbox, including a program targeting MAGEA4, a surface antigen that is highly expressed across multiple solid tumors.

Blend of Strategic Collaboration and In-House Approach to Manufacturing
Integral to the delivery of 2seventy bio's platform of cell therapies is the company's manufacturing network, including best-in-class partnerships with academic centers and industry, purpose-built for messenger RNA (mRNA) and lentiviral vector (LVV) production. This network also includes a planned build for an internal clinical cell therapy manufacturing capability at the company's headquarters in Cambridge, Massachusetts. This facility is designed to enable deep integration of Chemistry, Manufacturing and Controls (CMC) with research, correlative science, and clinical development, and enable the flexibility to rapidly innovate and learn as programs advance.

Launching with a Strong Financial Foundation and Leadership
2seventy bio is launching with a clear and differentiated strategy and is well-funded to deliver:
- **ABECMA –** In 3Q21, BMS reported total U.S. revenues of $67 million for ABECMA. 2seventy bio will continue to share equally in the costs and revenue for ABECMA in the U.S. The companies continue to experience robust demand for ABECMA and are working to improve manufacturing capacity and supply.
- **Board –** 2seventy bio is launching with an experienced leadership team and Board of Directors, including:
    - Daniel S. Lynch (chairman – independent), Sarah Glickman (Audit Committee chair - Criteo), Denice Torres, J.D. (formerly of Johnson & Johnson), Ramy Ibrahim, M.D. (Broad Institute of MIT and Harvard), Marcela Maus, Ph.D. (Mass General Cancer Center), William Sellers, M.D. (Core Institute Member, Broad Institute of MIT, and Harvard) and Nick Leschly (2seventy bio)
- **Financial Position –** 2seventy bio is launching with approximately $442 million in cash, which the company anticipates is sufficient to fund operations into 2023.

[1] ABECMA has also received regulatory approval in the European Union, Canada, and Switzerland. Bristol Myers Squibb continues to assume sole responsibility for drug product manufacturing and commercialization outside the United States.

About 2seventy bio

Our name, 2seventy bio, reflects why we do what we do - TIME. Cancer rips time away, and our goal is to work at the maximum speed of translating human thought into action – 270 miles per hour—to give the people we serve more time. We are building the leading immuno-oncology cell therapy company, focused on discovering and developing new therapies that truly disrupt the cancer treatment landscape. With a deep understanding of the human body's immune response to tumor cells and how to translate cell therapies into practice, we're applying this knowledge to deliver next generation cellular therapies that focus on a broad range of hematologic malignancies, including the first FDA-approved CAR T cell therapy for multiple myeloma, as well as solid tumors. Our research and development is focused on delivering therapies that are designed with the goal to "think" smarter and faster than the disease. Importantly, we remain focused on accomplishing these goals by staying genuine and authentic to our "why" and keeping our people and culture top of mind every day.

For more information, visit www.2seventybio.com.

Follow 2seventy bio on social media: Twitter and LinkedIn.

Forward-Looking Statements

This release contains "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. These statements include, but are not limited to: statements about our plans with respect to the development, manufacture or sale of our product candidates and the associated timing thereof, including the design and results of pre-clinical and clinical studies; the efficacy and perceived therapeutic benefits of our product candidates and the potential indications and market opportunities therefor; the strategic plans for 2seventy bio and potential corporate development opportunities; our ability to compete with other companies that are or may be developing or selling products that are competitive with our product candidates; and our ability to operate as a stand-alone company and execute our strategic priorities. Applicable risks and uncertainties include the risk that we may not achieve the expected benefits of the separation; the risk that the separation could harm our business, results of operations and financial condition; our lack of independent operating history and the risk that its accounting and other management systems may not be prepared to meet the financial reporting and other requirements of operating as an independent public company; the risk that we may be unable to make, on a timely or cost-effective basis, the changes necessary to operate as an independent company; the risk that dedicated financial and/or strategic funding sources may not be available on favorable terms or at all; the risk that the separation may adversely impact our ability to attract or retain key personnel; the risk that the separation may adversely impact the effectiveness of development and commercialization efforts by us and our partners; the risk of possible disruption to our business as a result of the separation; ; the risk that our BLAs and INDs will not be accepted for filing by the FDA on the timeline that we expect; the risk that our plans with respect to the preclinical and clinical development and regulatory approval of our product candidates may not be successfully achieved on the planned timeline, or at all; the risk that ABECMA will not be as commercially successful as we may anticipate; and the risk that we are unable to manage our operating expenses or cash use for operations. For a discussion of other risks and uncertainties, and other important factors, any of which could cause our actual results to differ from those contained in the forward-looking statements, see the section entitled "Risk Factors" in the Form 10 filed by 2seventy bio with the Securities and Exchange Commission (SEC) and declared effective by the SEC on October 18, 2021, as well as discussions of potential risks, uncertainties, and in 2seventy bio's subsequent filings with the Securities and Exchange Commission. All

information in this press release is as of the date of the release, and 2seventy bio undertakes no duty to update this information unless required by law.

*Kairos: an Ancient Greek word meaning the right, critical, or opportune moment

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