

**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): September 7, 2021

bluebird bio, Inc.

(Exact name of Registrant as Specified in Its Charter)

Delaware
(State or Other Jurisdiction
of Incorporation)

001-35966
(Commission File Number)

13-3680878
(IRS Employer
Identification No.)

**60 Binney Street,
Cambridge, MA**
(Address of Principal Executive Offices)

02142
(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, \$0.01 par value per share	BLUE	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.

Securities Purchase Agreement

On September 7, 2021, bluebird bio, Inc. (“bluebird” or the “Company”) entered into a Securities Purchase Agreement (the “Securities Purchase Agreement”) with the institutional investors named therein (collectively, the “Purchasers,” and each, a “Purchaser”), providing for a private placement transaction exempt from the registration requirements of the Securities Act of 1933, as amended (the “Securities Act”), pursuant to which the Company will issue and sell (i) 2,272,727 shares of the Company’s common stock, par value \$0.01 per share (the Common Stock”), at a purchase price of \$16.50 per share, and (ii) pre-funded warrants (the “Pre-Funded Warrants”) to purchase 2,272,727 shares of 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 the form attached to the Securities Purchase Agreement as Exhibit A thereto, for aggregate gross proceeds to the Company of approximately \$75 million (the “Transaction”). The closing of the private placement is expected to occur on September 10, 2021, subject to satisfaction of customary closing conditions.

As previously announced, the Company intends to separate its severe genetic disease and oncology programs into two separate, independent publicly traded companies (the “Separation”), bluebird and 2seventy bio, Inc., a newly-formed Delaware corporation and wholly-owned subsidiary of the Company (“2seventy”). Following the Separation, all ongoing obligations of bluebird with respect to the Transaction shall also become obligations of 2seventy.

Subject to the conditions set forth in the Securities Purchase Agreement, the lead investor named in the Securities Purchase Agreement shall have the right to prior notice of certain issuances of securities by the Company in public offerings and the right to prior notice and to participate in certain issuances of securities by the Company in private offerings in the aggregate required to enable it to maintain its proportionate common stock interest in the Company (calculated on a fully diluted basis) immediately prior to any such issuance of securities.

The representations, warranties and covenants contained in the Securities Purchase Agreement were made solely for the benefit of the parties to the Securities Purchase Agreement and may be subject to limitations agreed upon by the contracting parties. Accordingly, the Securities Purchase Agreement is incorporated herein by reference only to provide investors with information regarding the terms of the Securities Purchase Agreement and not to provide investors with any other factual information regarding the Company or its business, and should be read in conjunction with the disclosures in the Company’s periodic reports and other filings with the Securities and Exchange Commission (“SEC”).

The Pre-Funded Warrants

The Pre-Funded Warrants have an exercise price of \$0.01 per share, subject to adjustment as set forth in the Pre-Funded Warrant. The Pre-Funded Warrants are immediately exercisable and may be exercised at any time until all of the Pre-Funded Warrants are exercised in full.

A holder (together with its affiliates) may not exercise any portion of the Pre-Funded Warrant, as applicable, to the extent that the holder would own more than 4.99% (the “Maximum Percentage”) of the Company’s outstanding Common Stock immediately after exercise, as such percentage ownership is determined in accordance with the terms of the Pre-Funded Warrant, provided that by written notice to the Company the holder may from time to time increase or decrease the Maximum Percentage to any other percentage specified in such notice not in excess of 19.99% of the total number of issued and outstanding shares of Common Stock of the Company following such exercise, provided further that any such increase will not be effective until the sixty-first (61st) day after such notice is delivered to the Company.

In lieu of making the cash payment otherwise contemplated to be made to the Company upon exercise of a Pre-Funded Warrant in payment of the aggregate exercise price, the holder may elect instead to receive upon such exercise (either in whole or in part) the net number of shares of Common Stock determined according to a formula set forth in the Pre-Funded Warrants.

In the event of certain corporate transactions, the holders of the Pre-Funded Warrants will be entitled to receive, upon exercise of the Pre-Funded Warrants, the kind and amount of securities, cash or other property that the holders would have received had they exercised the Pre-Funded Warrants immediately prior to such transaction, provided that, in connection with the Separation, the Company shall cause 2seventy to issue the holders of the Pre-Funded Warrant a new warrant for that number of shares of 2seventy stock that the holder would have been entitled to receive in connection with the Separation had the unexercised portion of such Pre-Funded Warrant at the effective time of the Separation been fully exercised, without regard to any limitation on exercise contained herein, at the effective time of the Separation, such warrant to have the same terms and conditions as the Pre-Funded Warrant, including the limitations on exercise contained therein.

Registration Rights Agreement

In addition, concurrently with the execution of the Securities Purchase Agreement, the Company entered into a registration rights agreement (the "Registration Rights Agreement") with the Purchasers, pursuant to which the Company agreed, following demand by any Purchaser at any time the Purchaser could reasonable be deemed to be an affiliate of the Company, as defined in the Registration Rights Agreement, to (i) file with the SEC a Registration Statement on Form S-3 covering the resale of the shares of Common Stock issued in the Transaction and issuable upon exercise of the Pre-Funded Warrants by the Purchasers as promptly as reasonably practicable following such demand, and in any event within sixty (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.

The foregoing description of the Securities Purchase Agreement, Pre-Funded Warrants and Registration Rights Agreement does not purport to be complete and is qualified in its entirety by reference to the full text of the Securities Purchase Agreement, which is filed herewith as Exhibit 10.1, the form of Pre-Funded Warrant, which is filed herewith as Exhibit 4.1, and the Registration Rights Agreement, which is filed herewith as Exhibit 10.2, each of which incorporated herein by reference.

Item 3.02 Unregistered Sales of Equity Securities.

The information provided in Item 1.01 of this Form 8-K with respect to the Transaction and the Securities Purchase Agreement is incorporated by reference into this Item 3.02.

The securities issued and sold in connection with the Transaction are being offered 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 Purchaser 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. A Form D filing will be made following the closing of the Transaction in accordance with the requirements of Regulation D.

Item 8.01 Other Events.

On September 8, 2021, the Company issued a press release announcing it had entered into the Securities Purchase Agreement. A copy of the press release is attached as Exhibit 99.1 hereto and is incorporated herein by reference.

Item 9.01 Financial Statements and Exhibits.

(d) Exhibits

Exhibit No.	Description
4.1	Form of Pre-Funded Warrant
10.1†*	Securities Purchase Agreement, dated September 7, 2021, by and among the Company and the institutional investors named therein.
10.2	Registration Rights Agreement, dated September 7, 2021, by and between the Company and the persons listed on the attached Schedule A thereto.
99.1	Press Release of the Company, dated September 8, 2021.
104	Cover Page Interactive Data File (embedded within the Inline XBRL document)

† Certain portions of this exhibit have been omitted pursuant to Item 601(b)(10)(iv) of Regulation S-K because such information is both (i) not material to investors and (ii) information that the Registrant treats as private or confidential.

* Schedules to this agreement have been omitted pursuant to Item 601(b)(2) of Regulation S-K because they contain information that is both (i) not material and (ii) of the type that the registrant treats as private and confidential. The Registrant will furnish copies of any such schedules to the Securities and Exchange Commission upon request.

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.

Date: September 8, 2021

bluebird bio, Inc.

By: /s/ Chip Baird
Chip Baird
*Chief Financial Officer, Principal Financial Officer and
Principal Accounting Officer*

FORM OF PRE-FUNDED WARRANT TO PURCHASE COMMON STOCKNumber of Shares: []
(subject to adjustment)

Warrant No. ____

Original Issue Date: [], 2021

bluebird bio, Inc., a Delaware corporation (the “Company”), hereby certifies that, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, [] or its registered assigns (the “Holder”), is entitled, subject to the terms set forth below, to purchase from the Company up to a total of [] shares of common stock, \$0.01 par value per share (the “Common Stock”), of the Company (each such share, a “Warrant Share” and all such shares, the “Warrant Shares”) at an exercise price per share equal to \$0.01 per share (as adjusted from time to time as provided in Section 9 herein, the “Exercise Price”), upon surrender of this *Warrant to Purchase Common Stock* (including any *Warrants to Purchase Common Stock* issued in exchange, transfer or replacement hereof, the “Warrant”) at any time and from time to time on or after the date hereof (the “Original Issue Date”), subject to the following terms and conditions:

1. Definitions. For purposes of this Warrant, the following terms shall have the following meanings:

(a) “Affiliate” means any Person directly or indirectly controlled by, controlling or under common control with, a Holder, but only for so long as such control shall continue. For purposes of this definition, “control” (including, with correlative meanings, “controlled by”, “controlling” and “under common control with”) means, with respect to a Person, possession, direct or indirect, of (a) the power to direct or cause direction of the management and policies of such Person (whether through ownership of securities or partnership or other ownership interests, by contract or otherwise), or (b) at least 50% of the voting securities (whether directly or pursuant to any option, warrant or other similar arrangement) or other comparable equity interests.

(b) “Commission” means the United States Securities and Exchange Commission.

(c) “Closing Sale Price” means, for any security as of any date, the last trade price for such security on the Principal Trading Market for such security, as reported by Bloomberg Financial Markets, or, if such Principal Trading Market begins to operate on an extended hours basis and does not designate the last trade price, then the last trade price of such security prior to 4:00 P.M., New York City time, as reported by Bloomberg Financial Markets, or if the foregoing do not apply, the last trade price of such security in the over-the-counter market on the electronic bulletin board for such security as reported by Bloomberg Financial Markets, or, if no last trade price is reported for such security by Bloomberg Financial Markets, the average of the bid and ask prices, of any market makers for such security as reported in the “pink sheets” by Pink Sheets LLC. If the Closing Sale Price cannot be calculated for a security on a particular date on any of the foregoing bases, the Closing Sale Price of such security on such date shall be the fair market value as mutually determined by the Company and the Holder. If the Company and the Holder are unable to agree upon the fair market value of such security, then the Board of Directors of the Company shall use its good faith judgment to determine the fair market value. The Board of Directors’ determination shall be binding upon all parties absent demonstrable error. All such determinations shall be appropriately adjusted for any stock dividend, stock split, stock combination or other similar transaction during the applicable calculation period.

(d) “Principal Trading Market” means the national securities exchange or other trading market on which the Common Stock is primarily listed on and quoted for trading, which, as of the Original Issue Date, shall be the Nasdaq Capital Market.

(e) “Securities Act” means the Securities Act of 1933, as amended.

(f) “Securities Purchase Agreement” means that certain Securities Purchase Agreement dated as of September 7, 2021.

(g) “Trading Day” means any weekday on which the Principal Trading Market is normally open for trading.

(h) “Transfer Agent” means American Stock Transfer & Trust Company, the Company’s transfer agent and registrar for the Common Stock, and any successor appointed in such capacity.

2. Issuance of Securities; Registration of Warrants. The Warrant, as initially issued by the Company, is offered and sold pursuant to the Securities Purchase Agreement. Accordingly, the Warrant and the Warrant Shares, are “restricted

securities” under Rule 144 promulgated under the Securities Act. The Company shall register ownership of this Warrant, upon records to be maintained by the Company for that purpose (the “*Warrant Register*”), in the name of the record Holder (which shall include the initial Holder or, as the case may be, any assignee to which this Warrant is assigned hereunder) from time to time. The Company may deem and treat the registered Holder of this Warrant as the absolute owner hereof for the purpose of any exercise hereof or any distribution to the Holder, and for all other purposes, absent actual notice to the contrary.

3. Registration of Transfers. Subject to compliance with all applicable securities laws, the Company shall, or will cause its Transfer Agent to, register the transfer of all or any portion of this Warrant in the Warrant Register, upon surrender of this Warrant, and payment for all applicable transfer taxes (if any). Upon any such registration or transfer, a new warrant to purchase Common Stock in substantially the form of this Warrant (any such new warrant, a “*New Warrant*”) evidencing the portion of this Warrant so transferred shall be issued to the transferee, and a New Warrant evidencing the remaining portion of this Warrant not so transferred, if any, shall be issued to the transferring Holder. The acceptance of the New Warrant by the transferee thereof shall be deemed the acceptance by such transferee of all of the rights and obligations in respect of the New Warrant that the Holder has in respect of this Warrant. The Company shall, or will cause its Transfer Agent to, prepare, issue and deliver at the Company’s own expense any New Warrant under this Section 3. Until due presentment for registration of transfer, the Company may treat the registered Holder hereof as the owner and holder for all purposes, and the Company shall not be affected by any notice to the contrary.

4. Exercise and Duration of Warrants.

(a) All or any part of this Warrant shall be exercisable by the registered Holder in any manner permitted by this Warrant at any time and from time to time on or after the Original Issue Date.

(b) The Holder may exercise this Warrant by delivering to the Company (i) an exercise notice, in the form attached as Schedule 1 hereto (the “*Exercise Notice*”), completed and duly signed, and (ii) payment of the Exercise Price for the number of Warrant Shares as to which this Warrant is being exercised (which may take the form of a “cashless exercise” if so indicated in the Exercise Notice pursuant to Section 10 below), and the date on which the last of such items is delivered to the Company (as determined in accordance with the notice provisions hereof) is an “*Exercise Date*.” The Holder shall not be required to deliver the original Warrant in order to effect an exercise hereunder. Execution and delivery of the Exercise Notice shall have the same effect as cancellation of the original Warrant and issuance of a New Warrant evidencing the right to purchase the remaining number of Warrant Shares, if any. The aggregate exercise price of this Warrant, except for the Exercise Price, was pre-funded to the Company on or before the Original Issue Date, and consequently no additional consideration (other than the Exercise Price) shall be required by to be paid by the Holder to effect any exercise of this Warrant. The Holder shall not be entitled to the return or refund of all, or any portion, of such pre-funded exercise price under any circumstance or for any reason whatsoever.

(c) The Company shall treat (i) the Warrants as Common Stock (and for the avoidance of doubt, not as “preferred stock” within the meaning of U.S. Treasury regulations Section 1.305-5(a)) and (ii) the exercise of all or a portion of the Warrants as a “tax nothing,” in each case, for U.S. federal, state and/or local tax purposes, as applicable, such that no gain or loss shall be recognized by the Holder upon exercise, unless an alternative treatment is required as a result of a “final determination” within the meaning of Section 1313(a) of the U.S. Internal Revenue Code of 1986, as amended.

5. Delivery of Warrant Shares.

(a) Upon exercise of this Warrant, the Company shall promptly (but in no event later than three (3) Trading Days after the Exercise Date), upon the request of the Holder, credit such aggregate number of shares of Common Stock to which the Holder is entitled pursuant to such exercise to the Holder’s or its designee’s balance account with The Depository Trust Company (“*DTC*”) through its Deposit Withdrawal Agent Commission system, or if the Transfer Agent is not participating in the Fast Automated Securities Transfer Program (the “*FAST Program*”) or if the certificates are required to bear a legend regarding restriction on transferability, issue and dispatch by overnight courier to the address as specified in the Exercise Notice, a certificate, registered in the Company’s share register in the name of the Holder or its designee, for the number of shares of Common Stock to which the Holder is entitled pursuant to such exercise. The Holder, or any natural person or legal entity (each, a “*Person*”) so designated by the Holder to receive Warrant Shares, shall be deemed to have become the holder of record of such Warrant Shares as of the Exercise Date, irrespective of the date such Warrant Shares are credited to the Holder’s DTC account or the date of delivery of the certificates evidencing such Warrant Shares, as the case may be.

(b) If by the close of the third (3rd) Trading Day after the Exercise Date, the Company fails to deliver to the Holder a certificate representing the required number of Warrant Shares in the manner required pursuant to Section 5(a), or fails to credit the Holder’s balance account with DTC for such number of Warrant Shares to which the Holder is entitled, and if

after such third (3rd) Trading Day and prior to the receipt of such Warrant Shares, the Holder purchases (in an open market transaction or otherwise, provided such purchases shall be made in a commercially reasonable manner at prevailing market prices) shares of Common Stock to deliver in satisfaction of a sale by the Holder of the Warrant Shares which the Holder anticipated receiving upon such exercise (a "Buy-In") in order to unwind its commercially reasonable hedge position with respect to this Warrant in a commercially reasonable manner, then the Company shall, within three (3) Trading Days after the Holder's request (1) pay in cash to the Holder an amount equal to the excess (if any) of Holder's total purchase price (including commercially reasonable brokerage commissions, if any) for the shares of Common Stock so purchased in the Buy-In over the product of (A) the number of shares of Common Stock purchased in the Buy-In, times (B) the prevailing market price at the time of the sell order giving rise to such purchase obligation, and at Holder's sole discretion, and (2) either (i) reinstate the portion of the Warrant and equivalent number of Warrant Shares for which such exercise was not honored (in which case such exercise shall be deemed rescinded) or (ii) deliver to the Holder the number of shares of Common Stock that would have been issued had the Company timely complied with its exercise and delivery obligations hereunder.

(c) To the extent permitted by law and subject to Section 5(b), the Company's obligations to issue and deliver Warrant Shares in accordance with and subject to the terms hereof (including the limitations set forth in [Section 11](#) below) are absolute and unconditional, irrespective of any action or inaction by the Holder to enforce the same, any waiver or consent with respect to any provision hereof, the recovery of any judgment against any Person or any action to enforce the same, or any setoff, counterclaim, recoupment, limitation or termination, or any breach or alleged breach by the Holder or any other Person of any obligation to the Company or any violation or alleged violation of law by the Holder or any other Person, and irrespective of any other circumstance that might otherwise limit such obligation of the Company to the Holder in connection with the issuance of Warrant Shares. Subject to Section 5(b), nothing herein shall limit the Holder's right to pursue any other remedies available to it hereunder, at law or in equity including, without limitation, a decree of specific performance and/or injunctive relief with respect to the Company's failure to timely deliver certificates representing shares of Common Stock upon exercise of the Warrant as required pursuant to the terms hereof.

6. Charges, Taxes and Expenses. Issuance and delivery of certificates for shares of Common Stock upon exercise of this Warrant shall be made without charge to the Holder for any issue or transfer tax, transfer agent fee or other incidental tax or expense (excluding any applicable stamp duties) in respect of the issuance of such certificates, all of which taxes and expenses shall be paid by the Company; *provided, however*, that the Company shall not be required to pay any tax that may be payable in respect of any transfer involved in the registration of Warrant Shares, any certificates therefor, or the Warrant (or any portion thereof) in a name other than that of the Holder or an Affiliate thereof. The Holder shall be responsible for all other tax liability that may arise as a result of holding or transferring this Warrant or receiving Warrant Shares upon exercise hereof.

7. Replacement of Warrant. If this Warrant is mutilated, lost, stolen or destroyed, the Company shall issue or cause to be issued in exchange and substitution for and upon cancellation hereof, or in lieu of and substitution for this Warrant, a New Warrant, but only upon receipt of evidence reasonably satisfactory to the Company of such loss, theft or destruction (in such case) and, in each case, a customary and reasonable indemnity and surety bond, if requested by the Company. Applicants for a New Warrant under such circumstances shall also comply with such other reasonable regulations and procedures and pay such other reasonable third-party costs as the Company may prescribe. If a New Warrant is requested as a result of a mutilation of this Warrant, then the Holder shall deliver such mutilated Warrant to the Company as a condition precedent to the Company's obligation to issue the New Warrant.

8. Reservation of Warrant Shares. The Company covenants that it will, at all times while this Warrant is outstanding, reserve and keep available out of the aggregate of its authorized but unissued and otherwise unreserved Common Stock, solely for the purpose of enabling it to issue Warrant Shares upon exercise of this Warrant as herein provided, the number of Warrant Shares that are initially issuable and deliverable upon the exercise of this entire Warrant, free from preemptive rights or any other contingent purchase rights of persons other than the Holder (taking into account the adjustments and restrictions of [Section 9](#)). The Company covenants that all Warrant Shares so issuable and deliverable shall, upon issuance and the payment of the applicable Exercise Price in accordance with the terms hereof, be duly and validly authorized, issued and fully paid and non-assessable. The Company will take all such action as may be reasonably necessary to assure that such shares of Common Stock may be issued as provided herein without violation of any applicable law or regulation, or of any requirements of any securities exchange or automated quotation system upon which the Common Stock may be listed. The Company further covenants that it will not, without the prior written consent of the Holder, take any actions to increase the par value of the Common Stock at any time while this Warrant is outstanding.

9. Certain Adjustments. The Exercise Price and number of Warrant Shares issuable upon exercise of this Warrant are subject to adjustment from time to time as set forth in this [Section 9](#).

(a) Stock Dividends and Splits. If the Company, at any time while this Warrant is outstanding, other than in connection with a Spin Off, (i) pays a stock dividend on its Common Stock or otherwise makes a distribution on any class of capital stock issued and outstanding on the Original Issue Date and in accordance with the terms of such stock on the Original Issue Date that is payable in shares of Common Stock, (ii) subdivides its outstanding shares of Common Stock into a larger number of shares of Common Stock, (iii) combines its outstanding shares of Common Stock into a smaller number of shares of Common Stock or (iv) issues by reclassification of shares of capital stock any additional shares of Common Stock of the Company, then in each such case the Exercise Price shall be multiplied by a fraction, the numerator of which shall be the number of shares of Common Stock outstanding immediately before such event and the denominator of which shall be the number of shares of Common Stock outstanding immediately after such event. Any adjustment made pursuant to clause (i) of this paragraph shall become effective immediately after the record date for the determination of stockholders entitled to receive such dividend or distribution, provided, however, that if such record date shall have been fixed and such dividend is not fully paid on the date fixed therefor, the Exercise Price shall be recomputed accordingly as of the close of business on such record date and thereafter the Exercise Price shall be adjusted pursuant to this paragraph as of the time of actual payment of such dividends. Any adjustment pursuant to clause (ii) or (iii) of this paragraph shall become effective immediately after the effective date of such subdivision or combination.

(b) Pro Rata Distributions. If the Company, at any time while this Warrant is outstanding, other than in connection with a Spin Off or any distribution of Common Stock covered by the preceding paragraph, distributes to all holders of Common Stock for no consideration (i) evidences of its indebtedness, (ii) any security or (iii) rights or warrants to subscribe for or purchase any security, or (iv) cash or any other asset (in each case, "*Distributed Property*"), then, upon any exercise of this Warrant that occurs after the record date fixed for determination of stockholders entitled to receive such distribution, the Holder shall be entitled to receive, in addition to the Warrant Shares otherwise issuable upon such exercise (if applicable), the Distributed Property that such Holder would have been entitled to receive in respect of such number of Warrant Shares had the Holder been the record holder of such Warrant Shares immediately prior to such record date without regard to any limitation on exercise contained therein.

(c) Fundamental Transactions. If, at any time while this Warrant is outstanding (i) the Company effects any merger or consolidation of the Company with or into another Person, in which the Company is not the surviving entity and in which the stockholders of the Company immediately prior to such merger or consolidation do not own, directly or indirectly, at least 50% of the voting power of the surviving entity immediately after such merger or consolidation, (ii) the Company effects any sale to another Person of all or substantially all of its assets in one transaction or a series of related transactions, (iii) pursuant to any tender offer or exchange offer (whether by the Company or another Person), holders of capital stock tender shares representing more than 50% of the voting power of the capital stock of the Company and the Company or such other Person, as applicable, accepts such tender for payment, (iv) the Company consummates a stock purchase agreement or other business combination (including, without limitation, a reorganization, recapitalization, spin-off or scheme of arrangement) with another Person whereby such other Person acquires more than the 50% of the voting power of the capital stock of the Company (except for any such transaction in which the stockholders of the Company immediately prior to such transaction maintain, in substantially the same proportions, the voting power of such Person immediately after the transaction) or (v) the Company effects any reclassification of the Common Stock or any compulsory share exchange pursuant to which the Common Stock is effectively converted into or exchanged for other securities, cash or property (other than as a result of a subdivision or combination of shares of Common Stock covered by Section 9(a) above) (in any such case, a "*Fundamental Transaction*"), then upon such Fundamental Transaction the Holder shall have the right to receive, upon exercise of this Warrant, the same amount and kind of securities, cash or property as it would have been entitled to receive upon the occurrence of such Fundamental Transaction if it had been, immediately prior to such Fundamental Transaction, the holder of the number of Warrant Shares then issuable upon exercise in full of this Warrant without regard to any limitations on exercise contained herein. In the event the Holder does not exercise this Warrant as contemplated by the foregoing sentence, this Warrant shall be deemed exercised in full without regard to any limitations on exercise contained herein pursuant to the "cashless exercise" provision in Section 10 hereof upon the effective date of the consummation of such Fundamental Transaction, provided that upon such deemed exercise, the Holder will not own more than five percent (5%) of the capital stock of such other Person. The provisions of this paragraph (c) shall similarly apply to subsequent transactions analogous of a Fundamental Transaction type.

(d) Spin Off Transactions. If the Company, at any time while this Warrant is outstanding, makes any dividend or distribution to holders of Common Stock of equity securities of a Company subsidiary, including without limitation the distribution to holders of Common Stock of equity securities of 2seventy bio, Inc. (a "*Spin Off*" and any such subsidiary company, "*Spinco*"), following which such Spinco shall be a publicly traded company, then, in lieu of any other adjustment hereunder, the Company shall cause Spinco to issue the Holder of this Warrant a new Warrant for that number of shares of Spinco stock that the Holder would have been entitled to receive in connection with the Spin Off had the unexercised portion of this Warrant at the effective time of such Spin Off been fully exercised, without regard to any limitation on exercise contained herein, at the effective time of such Spin Off, such warrant to have the same terms and conditions as this Warrant, including the limitations on exercise contained herein, provided that the exercise price of such

Spinco warrant shall be adjusted to a number determined by dividing the Exercise Price of this Warrant by the Spinco Conversion Fraction (defined below), provided further that in no event shall such exercise price be adjusted to a price that is lower than the par value per share of the Spinco stock issuable upon exercise of such Spinco warrant. For purposes hereof, the Spinco Conversion Fraction shall mean a fraction equal to: (i) the official “regular way” closing price of the Company’s Common Stock on the securities exchange on which such shares are then listed on the trading day immediately preceding the effective date of the Spin Off, divided by (ii) the official “regular way” first trading price of Spinco common stock on the securities exchange on which such shares are then listed on the first trading day immediately following the effective date of the Spin Off. For purposes hereof, the “effective date” of the Spin Off shall mean the date on which the distribution of Spinco common shares to holders of Company Common Stock occurs and the “effective time” of the Spin Off shall mean the time at which the distribution of Spinco common shares to holders of Company Common Stock occurs. For the sake of clarity and notwithstanding anything to the contrary there shall be no adjustment to the Exercise Price of this Warrant in connection with such Spin Off

(e) Number of Warrant Shares. Simultaneously with any adjustment to the Exercise Price pursuant to Section 9, the number of Warrant Shares that may be purchased upon exercise of this Warrant shall be increased or decreased proportionately, so that after such adjustment the aggregate Exercise Price payable hereunder for the increased or decreased number of Warrant Shares shall be the same as the aggregate Exercise Price in effect immediately prior to such adjustment.

(f) Calculations. All calculations under this Section 9 shall be made to the nearest one-tenth of one cent or the nearest share, as applicable.

(g) Notice of Adjustments. Upon the occurrence of each adjustment pursuant to this Section 9, the Company at its expense will, at the written request of the Holder, promptly compute such adjustment, in good faith, in accordance with the terms of this Warrant and prepare a certificate setting forth such adjustment, including a statement of the adjusted Exercise Price and adjusted number or type of Warrant Shares or other securities issuable upon exercise of this Warrant (as applicable), describing the transactions giving rise to such adjustments and showing in detail the facts upon which such adjustment is based. Upon written request, the Company will promptly deliver a copy of each such certificate to the Holder and to the Company’s transfer agent.

(h) Notice of Corporate Events. If, while this Warrant is outstanding, the Company (i) declares a dividend or any other distribution of cash, securities or other property in respect of its Common Stock, including, without limitation, any granting of rights or warrants to subscribe for or purchase any capital stock of the Company or any subsidiary, (ii) authorizes or approves, enters into any agreement contemplating or solicits stockholder approval for any Fundamental Transaction or (iii) authorizes the voluntary dissolution, liquidation or winding up of the affairs of the Company, then, except if such notice and the contents thereof shall be deemed to constitute material non-public information, the Company shall deliver to the Holder a notice of such transaction at least ten (10) days prior to the applicable record or effective date on which a Person would need to hold Common Stock in order to participate in or vote with respect to such transaction; *provided, however*, that the failure to deliver such notice or any defect therein shall not affect the validity of the corporate action required to be described in such notice. In the event such notice and the contents thereof shall be deemed to constitute material non-public information, the Company shall (on the same time frame set forth in the immediately prior sentence) offer the Holder the ability to sign a confidentiality agreement related thereto sufficient to allow the Holder to receive such notice, and the Company shall deliver such notice immediately upon execution of such confidentiality agreement. In addition, if while this Warrant is outstanding, the Company authorizes or approves, enters into any agreement contemplating or solicits stockholder approval for any Fundamental Transaction contemplated by Section 9(c), other than a Fundamental Transaction under clause (iii) of Section 9(c), the Company shall deliver to the Holder a notice of such Fundamental Transaction at least thirty (30) days prior to the date such Fundamental Transaction is consummated. Holder agrees to maintain any information disclosed pursuant to this Section 9(g) in confidence until such information is publicly available, and shall comply with applicable law with respect to trading in the Company’s securities following receipt any such information.

10. Payment of Exercise Price. Notwithstanding anything contained herein to the contrary, the Holder may, in its sole discretion, satisfy its obligation to pay the Exercise Price through a “cashless exercise”, in which event the Company shall issue to the Holder the number of Warrant Shares in an exchange of securities effected pursuant to Section 3(a)(9) of the Securities Act, as determined as follows:

$$X = Y [(A-B)/A]$$

where:

“X” equals the number of Warrant Shares to be issued to the Holder;

“Y” equals the total number of Warrant Shares with respect to which this Warrant is then being exercised;

“A” equals the Closing Sale Price of the shares of Common Stock (as reported by Bloomberg Financial Markets) on the Trading Day immediately preceding the Exercise Date; and

“B” equals the Exercise Price then in effect for the applicable Warrant Shares at the time of such exercise.

For purposes of Rule 144 promulgated under the Securities Act, it is intended, understood and acknowledged that the Warrant Shares issued in a “cashless exercise” transaction shall be deemed to have been acquired by the Holder, and the holding period for the Warrant Shares shall be deemed to have commenced, on the date this Warrant was originally issued (provided that the Commission continues to take the position that such treatment is proper at the time of such exercise). In the event that a registration statement registering the issuance of Warrant Shares is, for any reason, not effective at the time of exercise of this Warrant, then the Warrant may only be exercised through a cashless exercise, as set forth in this Section 10. Except as set forth in Section 5(b) (Buy-In remedy), Section 9(b) (Pro Rata Distributions), Section 9(c) (Fundamental Transactions) and Section 12 (payment of cash in lieu of fractional shares), in no event will the exercise of this Warrant be settled in cash.

11. Limitations on Exercise.

(a) Notwithstanding anything to the contrary contained herein, the Company shall not effect any exercise of this Warrant, and the Holder shall not be entitled to exercise this Warrant for a number of Warrant Shares in excess of that number of Warrant Shares which, upon giving effect or immediately prior to such exercise, would cause (i) the aggregate number of shares of Common Stock beneficially owned by the Holder, its Affiliates and any other Persons who are members of a Section 13(d) group with such Holder or its Affiliates to exceed 4.99% (the “Maximum Percentage”) of the total number of issued and outstanding shares of Common Stock of the Company following such exercise, or (ii) the combined voting power of the securities of the Company beneficially owned by the Holder and its Affiliates and any other Persons who are members of a Section 13(d) group with such Holder or its Affiliates to exceed the Maximum Percentage of the combined voting power of all of the securities of the Company then outstanding following such exercise. For purposes of this paragraph, beneficial ownership and whether a holder is a member of a Section 13(d) group shall be calculated and determined in accordance with Section 13(d) of the Exchange Act and the rules promulgated thereunder. For purposes of this Warrant, in determining the number of outstanding shares of Common Stock, the Holder may rely on the number of outstanding shares of Common Stock as reflected in (x) the Company’s most recent Quarterly Report on Form 10-Q or Annual Report on Form 10-K, as the case may be, filed with the Commission prior to the date hereof, (y) a more recent public announcement by the Company or (z) any other notice by the Company or the Transfer Agent setting forth the number of shares of Common Stock outstanding. Upon the written request of the Holder, the Company shall within three (3) Trading Days confirm in writing or by electronic mail to the Holder the number of shares of Common Stock then outstanding. In any case, the number of outstanding shares of Common Stock shall be determined after giving effect to the conversion or exercise of securities of the Company, including this Warrant, by the Holder since the date as of which such number of outstanding shares of Common Stock was reported. By written notice to the Company, the Holder may from time to time increase or decrease the Maximum Percentage to any other percentage specified in such notice not in excess of 19.99% of the total number of issued and outstanding shares of Common Stock of the Company following such exercise; provided that any such increase will not be effective until the sixty-first (61st) day after such notice is delivered to the Company. For purposes of this Section 11(a), the aggregate number of shares of Common Stock or voting securities beneficially owned by the Holder and its Affiliates and any other Persons who are members of a Section 13(d) group with such Holder or its Affiliates shall include the shares of Common Stock issuable upon the exercise of this Warrant with respect to which such determination is being made plus the remaining unexercised and non-cancelled portion of this Warrant but taking into account the limitations on exercise contained herein, but shall exclude (x) the number of shares of Common Stock which would otherwise be issuable upon exercise of the remaining unexercised and non-cancelled portion of this Warrant but for the limitations on exercise contained herein and (y) the exercise or conversion of the unexercised, non-converted or non-cancelled portion of any other securities of the Company that do not have voting power (including without limitation any securities of the Company which would entitle the holder thereof to acquire at any time Common Stock, including without limitation any debt, preferred stock, right, option, warrant or other instrument that is at any time convertible into or exercisable or exchangeable for, or otherwise entitles the holder thereof to receive, Common Stock), and is subject to any further limitation on conversion or exercise analogous to the limitation contained herein.

(b) This Section 11 shall not restrict the number of shares of Common Stock which a Holder may receive or beneficially own in order to determine the amount of securities or other consideration that such Holder may receive in the event of a Fundamental Transaction as contemplated in Section 9(c) of this Warrant.

12. No Fractional Shares. No fractional Warrant Shares will be issued in connection with any exercise of this Warrant. In lieu of any fractional shares that would otherwise be issuable, the number of Warrant Shares to be issued shall be rounded down to the next whole number and the Company shall pay the Holder in cash the fair market value (based on the Closing Sale Price) for any such fractional shares.

13. Notices. Any and all notices or other communications or deliveries hereunder (including, without limitation, any Exercise Notice) shall be in writing and shall be deemed given and effective on the earliest of (i) the date of transmission, if such notice or communication is delivered via facsimile or confirmed e-mail at the facsimile number or e-mail address specified in the books and records of the Transfer Agent prior to 5:30 P.M., New York City time, on a Trading Day, (ii) the next Trading Day after the date of transmission, if such notice or communication is delivered via facsimile or confirmed e-mail at the facsimile number or e-mail address specified in the books and records of the Transfer Agent on a day that is not a Trading Day or later than 5:30 P.M., New York City time, on any Trading Day, (iii) the Trading Day following the date of mailing, if sent by nationally recognized overnight courier service specifying next business day delivery, or (iv) upon actual receipt by the Person to whom such notice is required to be given, if by hand delivery.

14. Warrant Agent. The Company shall initially serve as warrant agent under this Warrant. Upon thirty (30) days' notice to the Holder, the Company may appoint a new warrant agent. Any corporation into which the Company or any new warrant agent may be merged or any corporation resulting from any consolidation to which the Company or any new warrant agent shall be a party or any corporation to which the Company or any new warrant agent transfers substantially all of its corporate trust or shareholders services business shall be a successor warrant agent under this Warrant without any further act. Any such successor warrant agent shall promptly cause notice of its succession as warrant agent to be mailed (by first class mail, postage prepaid) to the Holder at the Holder's last address as shown on the Warrant Register.

15. Miscellaneous.

(a) No Rights as a Stockholder. The Holder, solely in such Person's capacity as a holder of this Warrant, shall not be entitled to vote or receive dividends or be deemed the holder of share capital of the Company for any purpose, nor shall anything contained in this Warrant be construed to confer upon the Holder, solely in such Person's capacity as the Holder of this Warrant, any of the rights of a stockholder of the Company or any right to vote, give or withhold consent to any corporate action (whether any reorganization, issue of stock, reclassification of stock, consolidation, merger, amalgamation, conveyance or otherwise), receive notice of meetings, receive dividends or subscription rights, or otherwise, prior to the issuance to the Holder of the Warrant Shares which such Person is then entitled to receive upon the due exercise of this Warrant. In addition, nothing contained in this Warrant shall be construed as imposing any liabilities on the Holder to purchase any securities (upon exercise of this Warrant or otherwise) or as a stockholder of the Company, whether such liabilities are asserted by the Company or by creditors of the Company.

(b) Authorized Shares. (i) Except and to the extent as waived or consented to by the Holder, the Company shall not by any action, including, without limitation, amending its certificate or articles of incorporation or through any reorganization, transfer of assets, consolidation, merger, dissolution, issue or sale of securities or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms of this Warrant, but will at all times in good faith assist in the carrying out of all such terms and in the taking of all such actions as may be necessary or appropriate to protect the rights of Holder as set forth in this Warrant against impairment. Without limiting the generality of the foregoing, the Company will (a) not increase the par value of any Warrant Shares above the amount payable therefor upon such exercise immediately prior to such increase in par value, (b) take all such action as may be necessary or appropriate in order that the Company may validly and legally issue fully paid and non-assessable Warrant Shares upon the exercise of this Warrant, and (c) use commercially reasonable efforts to obtain all such authorizations, exemptions or consents from any public regulatory body having jurisdiction thereof as may be necessary to enable the Company to perform its obligations under this Warrant.

(ii) Before taking any action which would result in an adjustment in the number of Warrant Shares for which this Warrant is exercisable or in the Exercise Price, the Company shall obtain all such authorizations or exemptions thereof, or consents thereto, as may be necessary from any public regulatory body or bodies having jurisdiction thereof.

(c) Successors and Assigns. Subject to compliance with applicable securities laws, this Warrant may be assigned by the Holder. This Warrant may not be assigned by the Company without the written consent of the Holder, except to a successor in the event of a Fundamental Transaction. This Warrant shall be binding on and inure to the benefit of the Company and the Holder and their respective successors and assigns. Subject to the preceding sentence, nothing in this Warrant shall be construed to give to any Person other than the Company and the Holder any legal or equitable right, remedy or cause of action under this Warrant. This Warrant may be amended only in writing signed by the Company and the Holder, or their successors and assigns.

(d) Amendment and Waiver. Except as otherwise provided herein, the provisions of the Warrants may be amended and the Company may take any action herein prohibited, or omit to perform any act herein required to be performed by it, only if the Company has obtained the written consent of the Holder.

(e) Acceptance. Receipt of this Warrant by the Holder shall constitute acceptance of and agreement to all of the terms and conditions contained herein.

(f) Governing Law; Jurisdiction. ALL QUESTIONS CONCERNING THE CONSTRUCTION, VALIDITY, ENFORCEMENT AND INTERPRETATION OF THIS WARRANT SHALL BE GOVERNED BY AND CONSTRUED AND ENFORCED IN ACCORDANCE WITH THE LAWS OF THE STATE OF NEW YORK WITHOUT REGARD TO THE PRINCIPLES OF CONFLICTS OF LAW THEREOF. EACH OF THE COMPANY AND THE HOLDER HEREBY IRREVOCABLY SUBMITS TO THE EXCLUSIVE JURISDICTION OF THE STATE AND FEDERAL COURTS SITTING IN THE CITY OF NEW YORK, BOROUGH OF MANHATTAN, 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 SUIT, ACTION OR PROCEEDING, ANY CLAIM THAT IT IS NOT PERSONALLY SUBJECT TO THE JURISDICTION OF ANY SUCH COURT. EACH OF THE COMPANY AND THE HOLDER HEREBY IRREVOCABLY WAIVES PERSONAL SERVICE OF PROCESS AND CONSENTS TO PROCESS BEING SERVED IN ANY SUCH SUIT, ACTION OR PROCEEDING BY MAILING A COPY THEREOF VIA REGISTERED OR CERTIFIED MAIL OR OVERNIGHT DELIVERY (WITH EVIDENCE OF DELIVERY) TO SUCH PERSON AT THE ADDRESS IN EFFECT FOR NOTICES TO IT 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 OF THE COMPANY AND THE HOLDER HEREBY WAIVES ALL RIGHTS TO A TRIAL BY JURY.

(g) Headings. The headings herein are for convenience only, do not constitute a part of this Warrant and shall not be deemed to limit or affect any of the provisions hereof.

(h) Severability. In case any one or more of the provisions of this Warrant shall be invalid or unenforceable in any respect, the validity and enforceability of the remaining terms and provisions of this Warrant shall not in any way be affected or impaired thereby, and the Company and the Holder will attempt in good faith to agree upon a valid and enforceable provision which shall be a commercially reasonable substitute therefor, and upon so agreeing, shall incorporate such substitute provision in this Warrant.

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK]

IN WITNESS WHEREOF, the Company has caused this Warrant to be duly executed by its authorized officer as of the date first indicated above.

BLUEBIRD BIO, INC.

By: _____
Name: Chip Baird
Title: Chief Financial Officer

SCHEDULE 1

FORM OF EXERCISE NOTICE

[To be executed by the Holder to purchase shares of Common Stock under the Warrant]

Ladies and Gentlemen:

(1) The undersigned is the Holder of Warrant No. ___ (the "Warrant") issued by bluebird bio, Inc. , a Delaware corporation (the "Company"). Capitalized terms used herein and not otherwise defined herein have the respective meanings set forth in the Warrant.

(2) The undersigned hereby exercises its right to purchase Warrant Shares pursuant to the Warrant.

(3) The Holder intends that payment of the Exercise Price shall be made as (check one):

- Cash Exercise
- "Cashless Exercise" under Section 10 of the Warrant

(4) If the Holder has elected a Cash Exercise, the Holder shall pay the sum of \$ in immediately available funds to the Company in accordance with the terms of the Warrant.

(5) Pursuant to this Exercise Notice, the Company shall deliver to the Holder Warrant Shares determined in accordance with the terms of the Warrant.

(6) By its delivery of this Exercise Notice, the undersigned represents and warrants to the Company that in giving effect to the exercise evidenced hereby the Holder will not beneficially own in excess of the number of shares of Common Stock (as determined in accordance with Section 13(d) of the Securities Exchange Act of 1934, as amended) permitted to be owned under Section 11(a) of the Warrant to which this notice relates.

Dated: _____

Name of Holder: _____

By: _____

Name: _____

Title: _____

(Signature must conform in all respects to name of Holder as specified on the face of the Warrant)

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.

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.

“*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.

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.

“*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, governmental 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 REALES 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:

Company:	If to the	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 thereof, 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]**

SIGNATURE PAGE TO SECURITIES PURCHASE AGREEMENT

667, L.P.

Name of Purchaser (Person or entity in whose name Address for notice: the shares will be registered)

Scott L. Lessing, President

Name and title of authorized officer (if subscriber is Street 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

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) Address for notice:

Scott L. Lessing, President

Name and title of authorized officer (if subscriber is a business entity) Street

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 partne

/s/ Scott L. Lessing

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.:

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

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

[Signature Page to Registration Rights Agreement]

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

bluebird bio Secures \$75 Million in Private Placement Equity Financing

*Proceeds to support both bluebird bio and 2seventy bio's pipeline of novel cell therapy programs
Business separation of bluebird and 2seventy expected to be completed in October 2021*

CAMBRIDGE, Mass. – September 8, 2021 – bluebird bio, Inc. (NASDAQ: BLUE) announced today that it has entered into an agreement for a \$75 million private placement of common stock and common stock equivalents with a healthcare investment fund selected as part of a competitive process. Proceeds from the financing will support ongoing R&D and commercialization investments for bluebird bio and for 2seventy bio, which plan to launch as independent companies in October 2021. The closing of the private placement is expected to occur in September 2021, subject to the satisfaction of customary closing conditions.

“When combined with the approximately \$900 million of cash expected at the time of separation, this \$75 million equity investment further strengthens the starting financial position of both businesses,” said Nick Leschly, chief bluebird. “We look forward to sharing more detail on the innovative and transformative therapies being developed as well as the pipeline, milestones, and strategic outlook for both companies as we head into separation and beyond.”

bluebird plans to complete the spin-off of 2seventy in October 2021, subject to customary conditions, including effectiveness of the Form 10, a favorable opinion from the IRS with respect to the tax-free nature of the transaction, and final approval from bluebird's Board of Directors.

About bluebird bio, Inc.

bluebird bio is pioneering gene therapy with purpose. From our Cambridge, Mass., headquarters, we're developing gene and cell therapies for severe genetic diseases and cancer, with the goal that people facing potentially fatal conditions with limited treatment options can live their lives fully. Beyond our labs, we're working to positively disrupt the healthcare system to create access, transparency and education so that gene therapy can become available to all those who can benefit.

bluebird bio is a human company powered by human stories. We're putting our care and expertise to work across a spectrum of disorders: cerebral adrenoleukodystrophy, sickle cell disease, β -thalassemia and multiple myeloma, using gene and cell therapy technologies including gene addition, and (megaTAL-enabled) gene editing.

bluebird bio has additional nests in Seattle, Wash.; Durham, N.C.; and Zug, Switzerland. For more information, visit bluebirdbio.com.

Follow bluebird bio on social media: @bluebirdbio, LinkedIn, Instagram and YouTube.

bluebird bio, 2seventy and 2seventy bio are trademarks of bluebird bio, Inc.

Forward-Looking Statements

This release contains "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995, including statements regarding the expected timing of the closing of the private placement, the use of proceeds from the private placement and the company's financial condition, as well as statements regarding the Company's plans and expectations regarding the division of assets among bluebird bio and 2seventy bio, the impact of a separation and the company's intention to provide further updates on the separation and the related financing strategies for bluebird bio and 2seventy. Any forward-looking statements are based on management's current expectations of future events and are subject to a number of risks and uncertainties that could cause actual results to differ materially and adversely from those set forth in or implied by such forward-looking statements. These risks and uncertainties include, but are not limited to, the risks that we may not complete the separation on the terms or timeline currently contemplated if at all, achieve the expected benefits of a separation, and a separation could harm our business, results of operations and financial condition; the risk that the transaction might not be tax-free; we may be unable to make, on a timely or cost-effective basis, the changes necessary to operate as independent companies; 2seventy bio's 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; dedicated financial and/or strategic funding sources may not be available on favorable terms; a separation or announcement thereof may adversely impact our ability to attract or retain key personnel; a separation may adversely impact the effectiveness of development and commercialization efforts by us and our partners; our businesses may be disrupted as a result of the announcement or pendency of the separation; and the risk that we are unable to realize the intended benefits of resizing and reshaping our workforce. 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 our most recent Form 10-Q, as well as discussions of potential risks, uncertainties, and other important factors in our subsequent filings with the Securities and Exchange Commission. All information in

this press release is as of the date of the release, and bluebird bio undertakes no duty to update this information unless required by law.

Investors & Media

Investors:

Elizabeth Pingpank, 617-914-8736
epingpank@bluebirdbio.com

Media:

Jenn Snyder, 617-448-0281
jsnyder@bluebirdbio.com