

**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): June 22, 2022

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.)

**455 Grand Union Boulevard,
Somerville, MA**
(Address of Principal Executive Offices)

02145
(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

On June 22, 2022, bluebird bio, Inc. (the “Company”) entered into an Equity Distribution Agreement (the “Equity Distribution Agreement”) with Goldman Sachs & Co. LLC (“Goldman”) to sell shares of the Company’s common stock, par value \$0.01 per share (the “Common Stock”), with aggregate gross sales proceeds of up to \$75.0 million, from time to time, through an “at the market” equity offering program under which Goldman will act as manager. The Equity Distribution Agreement also provides for the sale of shares to Goldman directly as principal, in which case the Company and Goldman will enter into a separate terms agreement (“Terms Agreement”).

Under the Equity Distribution Agreement, the Company will set the parameters for the sale of shares, including any price, time or size limits or other customary parameters or conditions. The Company intends to sell shares pursuant to the Equity Distribution Agreement from time to time in varying amounts, which may be limited, based upon factors including (among others) market conditions, trading liquidity, the trading price of the Company’s Common Stock, and determinations by the Company of its need for, and appropriate sources of, additional capital. Subject to the terms and conditions of the Equity Distribution Agreement, Goldman may sell the shares by any method permitted by law, including without limitation (i) by means of ordinary brokers’ transactions (whether or not solicited), (ii) to or through a market maker, (iii) directly on or through any national securities exchange or facility thereof, a trading facility of a national securities association, an alternative trading system, or any other market venue, (iv) in the over-the-counter market, (v) in privately negotiated transactions, or (vi) through a combination of any such methods. The Company will pay Goldman a commission equal to up to 3.0% of the gross proceeds of any Common Stock sold through Goldman under the Equity Distribution Agreement, and also has provided Goldman with customary representations, warranties, covenants and indemnification rights. The Equity Distribution Agreement may be terminated by the Company upon written notice to Goldman or by Goldman upon written notice to the Company. In the case of any purchase of shares by Goldman directly as principal pursuant to a Terms Agreement, such Terms Agreement may be terminated by Goldman upon notice to the Company under certain circumstances, including but not limited to the occurrence of a material adverse effect in the Company.

Any sales of shares under the Equity Distribution Agreement will be made pursuant to the Company’s shelf registration statement on Form S-3 (File No. 333-236489) filed with the Securities and Exchange Commission (the “Commission”) on February 18, 2020, which was automatically effective upon filing. The Company filed a prospectus supplement with the Commission on June 22, 2022 in connection with the offer and sale of the shares pursuant to the Equity Distribution Agreement.

The foregoing is only a brief description of the material terms of the Equity Distribution Agreement and is qualified in its entirety by reference to the full agreement, a copy of which is filed as Exhibit 1.1 to this Current Report on Form 8-K and is incorporated herein by reference.

Latham & Watkins LLP, counsel to the Company, has issued an opinion to the Company, dated June 22, 2022, regarding the validity of the shares of Common Stock to be issued and sold pursuant to the Equity Distribution Agreement. A copy of the opinion is filed as Exhibit 5.1 to this Current Report on Form 8-K.

This Current Report on Form 8-K shall not constitute an offer to sell or the solicitation of any offer to buy the securities discussed herein, nor shall there be any offer, solicitation or sale of the securities in any state in which such offer, solicitation or sale would be unlawful prior to registration or qualification under the securities laws of any such state.

Item 9.01 Financial Statements and Exhibits.

(d) Exhibits

<u>Exhibit No.</u>	<u>Description</u>
1.1	Equity Distribution Agreement, dated as of June 22, 2022, by and between bluebird bio, Inc. and Goldman Sachs & Co. LLC.
5.1	Opinion of Latham & Watkins, LLP.
23.1	Consent of Latham & Watkins, LLP (included in Exhibit 5.1).
104	Cover Page Interactive Data File (embedded within the Inline XBRL document)

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: June 22, 2022

bluebird bio, Inc.

By: /s/ Jason F. Cole

Jason F. Cole

*Chief Strategy & Financial Officer, Principal Financial Officer and
Principal Accounting Officer*

bluebird bio, Inc.

Common Stock, par value \$0.01 per share

Having an Aggregate Offering Price of up to
\$75,000,000

Equity Distribution Agreement

June 22, 2022

Goldman Sachs & Co. LLC
200 West Street
New York, New York 10282

Ladies and Gentlemen:

bluebird bio, Inc., a Delaware corporation (the “**Company**”), confirms its agreement (this “**Agreement**”) with Goldman Sachs & Co. LLC (the “**Manager**”) as follows:

1. Description of Shares. The Company proposes to issue and sell through or to the Manager, as sales agent and/or principal, shares of the Company’s common stock, par value \$0.01 per share (the “**Common Stock**”), having an aggregate offering price of up to \$75,000,000 (the “**Shares**”), from time to time during the term of this Agreement and on the terms set forth in Section 3 of this Agreement. The Company hereby appoints the Manager as the exclusive agent of the Company for the purpose of making offers and sales of the Shares. The Company agrees that whenever it determines to sell the Shares directly to the Manager as principal, it will enter into a separate agreement (each, a “**Terms Agreement**”) in substantially the form of Annex I hereto, relating to such sale in accordance with Section 3 of this Agreement. Certain terms used herein are defined in Section 18 hereof.

2. Representations and Warranties. The Company represents and warrants to, and agrees with, the Manager at the Execution Time and on each such time the following representations and warranties are repeated or deemed to be made pursuant to this Agreement, as set forth below.

(a) Form S-3. The Company meets the requirements for use of Form S-3 under the Act and has prepared and filed with the Commission an automatically effective shelf registration statement (File Number 333-236489) on Form S-3, including a related Base Prospectus, for registration under the Act of the offering and sale of the Shares and other securities of the Company. No stop order suspending the effectiveness of the Registration Statement has been issued under the Act and no proceedings for that purpose have been instituted or are pending or, to the knowledge of the Company, are contemplated or threatened by the Commission, and any request on the part of the Commission for additional or supplemental information has been complied with. The Company shall file with the Commission the Prospectus Supplement relating to the Shares in accordance with Rule 424(b) promptly after the Execution Time (but in any event in the time period prescribed thereby). As filed, the

Prospectus will contain all information required by the Act and the rules thereunder, and, except to the extent the Manager shall agree in writing to a modification, shall be in all substantive respects in the form furnished to the Manager prior to the Execution Time or prior to any such time this representation is repeated or deemed to be made. The Registration Statement, at the Execution Time, each such time this representation is repeated or deemed to be made, and at all times during which a prospectus is required by the Act to be delivered (whether physically or through compliance with Rule 172 or any similar rule) in connection with any offer or sale of Shares, meets the requirements set forth in Rule 415(a)(1)(x) under the Act. The initial Effective Date of the Registration Statement was not earlier than the date three years before the Execution Time. Any reference herein to the Registration Statement, the Base Prospectus, the Prospectus Supplement, any Interim Prospectus Supplement or the Prospectus shall be deemed to refer to and include the documents incorporated by reference therein pursuant to Item 12 of Form S-3 which were filed under the Exchange Act on or before the Effective Date of the Registration Statement or the issue date of the Base Prospectus, the Prospectus Supplement, any Interim Prospectus Supplement or the Prospectus, as the case may be; and any reference herein to the terms “amend,” “amendment” or “supplement” with respect to the Registration Statement, the Base Prospectus, the Prospectus Supplement, any Interim Prospectus Supplement or the Prospectus shall be deemed to refer to and include the filing of any document under the Exchange Act after the Effective Date of the Registration Statement or the issue date of the Base Prospectus, the Prospectus Supplement, any Interim Prospectus Supplement or the Prospectus, as the case may be, deemed to be incorporated therein by reference. Notwithstanding the foregoing, the representations and warranties in this subsection shall not apply to statements in or omissions from the Registration Statement or any post-effective amendment or the Prospectus or any amendments or supplements thereto, made in reliance upon and in conformity with information furnished to the Company in writing by the Manager relating to the Manager expressly for use therein.

(b) Successor Registration Statement. To the extent that the Registration Statement is not available for the sales of the Shares as contemplated by this Agreement, the Company shall file a new registration statement with respect to any additional Common Stock necessary to complete such sales of the Shares and shall cause such registration statement to become effective as promptly as practicable. After the effectiveness of any such registration statement, all references to “Registration Statement” included in this Agreement shall be deemed to include such new registration statement, including all documents incorporated by reference therein pursuant to Item 12 of Form S-3, and all references to “Base Prospectus” included in this Agreement shall be deemed to include the final form of prospectus, including all documents incorporated therein by reference, included in any such registration statement at the time such registration statement became effective.

(c) No Material Misstatements or Omissions in the Registration Statement. On each Effective Date, at the Execution Time, at each deemed effective date with respect to the Manager pursuant to Rule 430B(f)(2) under the Act, at each Applicable Time, at each Settlement Date, at each Time of Delivery and at all times during which a prospectus is required by the Act to be delivered (whether physically or through compliance with Rule 172 or any similar rule) in connection with any offer or sale of Shares, the Registration Statement complied and, as amended or supplemented, if applicable, will comply in all material respects with the applicable requirements of the Act and the rules thereunder and did not and, as amended or supplemented, if

applicable, will not contain any untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary in order to make the statements therein not misleading; and on the date of any filing pursuant to Rule 424(b) and at each Applicable Time, on each Settlement Date, at each Time of Delivery and at all times during which a prospectus is required by the Act to be delivered (whether physically or through compliance with Rule 172 or any similar rule) in connection with any offer or sale of Shares, the Prospectus (together with any supplement thereto) complied and, as amended or supplemented, if applicable, will comply in all material respects with the applicable requirements of the Act and the rules thereunder and did not and, as amended or supplemented, if applicable, will not include any untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading; *provided, however*, that the Company makes no representations or warranties as to the information contained in or omitted from the Registration Statement or any post-effective amendment or the Prospectus (or any supplement thereto) in reliance upon and in conformity with information furnished in writing to the Company by the Manager specifically for inclusion in the Registration Statement or post-effective amendment or the Prospectus (or any supplement thereto).

(d) Disclosure Package. At the Execution Time, at each Applicable Time, at each Settlement Date and each Time of Delivery, the Disclosure Package does not contain any untrue statement of a material fact or omit to state any material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading. The preceding sentence does not apply to statements in or omissions from the Disclosure Package based upon and in conformity with written information furnished to the Company by the Manager specifically for use therein.

(e) Incorporated Documents. The documents incorporated or deemed to be incorporated by reference in the Registration Statement and the Prospectus (i) at the time they were or hereafter are filed with the Commission, complied and will comply in all material respects with the requirements of the Exchange Act and the rules and regulations of the Commission thereunder and (ii) when read together with the other information in the Prospectus and the Disclosure Package at any Applicable Time and when read together with the other information in the Prospectus at the date of the Prospectus and at any Settlement Date or Time of Delivery, will not include an untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading.

(f) Ineligible Issuer. The Company is not an “ineligible issuer,” as defined in Rule 405 of the rules and regulations of the Commission. The Company agrees to notify the Manager promptly upon the Company becoming an “ineligible issuer.”

(g) Notice of Other Sales. Prior to the execution of this Agreement, the Company has not, directly or indirectly, offered or sold any Shares by means of any “prospectus” (within the meaning of the Act) or used any “prospectus” (within the meaning of the Act) in connection with the offer or sale of the Shares, and from and after the execution of this Agreement, the Company will not, directly or indirectly, offer or sell any Shares by means of any “prospectus” (within the meaning of the Act) or use any “prospectus” (within the meaning of the Act) in connection with the offer or sale of the Shares, other than the Prospectus, as amended or

supplemented from time to time in accordance with the provisions of this Agreement; the Company has not, directly or indirectly, prepared, used or referred to any Issuer Free Writing Prospectus.

(h) No Stop Orders. The Registration Statement is not the subject of a pending proceeding or examination under Section 8(d) or 8(e) of the Act, and the Company is not the subject of a pending proceeding under Section 8A of the Act in connection with the offering of the Shares.

(i) Regulation M. The Common Stock constitutes an “actively-traded security” exempted from the requirements of Rule 101 of Regulation M under the Exchange Act by subsection (c)(1) of such rule.

(j) Sales Agency Agreements. The Company has not entered into any other sales agency agreements or other similar arrangements with any agent or any other representative in respect of any at the market offering (within the meaning of Rule 415(a)(4) under the Act) of the Shares.

(k) Offering Materials. The Company has not distributed and will not distribute, prior to the completion of the Manager’s distribution of the Shares, any offering material in connection with the offering and sale of the Shares other than the Prospectus and any Permitted Free Writing Prospectus reviewed and consented to by the Manager and identified in Schedule I hereto.

(l) Well-Known Seasoned Issuer. (A) At the original effectiveness of the Registration Statement, (B) at the time of the most recent amendment thereto for the purposes of complying with Section 10(a)(3) of the Act (whether such amendment was by post-effective amendment, incorporated report filed pursuant to Section 13 or 15(d) of the Exchange Act or form of prospectus), (C) at the time the Company or any person acting on its behalf (within the meaning, for this clause only, of Rule 163(c) under the Act) made any offer relating to the Shares in reliance on the exemption of Rule 163 under the Act, and (D) as of the Execution Time, at each Applicable Time, at each Settlement Date and each Time of Delivery, the Company was and is a “well-known seasoned issuer” (as defined in Rule 405 under the Act).

(m) Financial Statements. The financial statements (including the related notes thereto) of the Company and its consolidated subsidiaries included or incorporated by reference in the Registration Statement, the Disclosure Package and the Prospectus comply in all material respects with the applicable requirements of the Act and the Exchange Act, as applicable, and present fairly in all material respects the financial position of the Company and its consolidated subsidiaries as of the dates indicated and the results of their operations and the changes in their cash flows for the periods specified, subject in the case of unaudited financial statements to normal year-end audit adjustments; such financial statements have been prepared in conformity with generally accepted accounting principles in the United States applied on a consistent basis throughout the periods covered thereby, except in the case of unaudited, interim financial statements, which are subject to normal year-end adjustments and do not contain certain footnotes as permitted by the applicable rules of the Commission, any supporting schedules included or incorporated by reference in the Registration Statement, and as may be expressly

stated in the related notes thereto present fairly in all material respects the information required to be stated therein; and the other financial information included or incorporated by reference in the Registration Statement, the Disclosure Package and the Prospectus has been derived from the accounting records of the Company and its consolidated subsidiaries and presents fairly in all material respects the information shown thereby.

(n) No Material Adverse Change. Since the date of the most recent financial statements of the Company included or incorporated by reference in the Registration Statement, the Disclosure Package and the Prospectus, (i) there has not been any change in the capital stock (other than the issuance of shares of Common Stock upon exercise of stock options and warrants described as outstanding in, and the grant of options and awards under existing equity incentive plans described in, the Registration Statement, the Disclosure Package and the Prospectus), short-term debt or long-term debt of the Company or any of its subsidiaries, or any dividend or distribution of any kind declared, set aside for payment, paid or made by the Company on any class of capital stock, or any material adverse change, or any development that would reasonably be expected to result in material adverse change, in or affecting the business, properties, management, financial position, stockholders' equity, results of operations or prospects of the Company and its subsidiaries taken as a whole; (ii) neither the Company nor any of its subsidiaries has entered into any transaction or agreement (whether or not in the ordinary course of business) that is material to the Company and its subsidiaries taken as a whole or incurred any liability or obligation, direct or contingent, that is material to the Company and its subsidiaries taken as a whole; and (iii) neither the Company nor any of its subsidiaries has sustained any loss or interference with its business that is material to the Company and its subsidiaries taken as a whole and that is either from fire, explosion, flood or other calamity, whether or not covered by insurance, or from any labor disturbance or dispute or any action, order or decree of any court or arbitrator or governmental or regulatory authority, except in each case as otherwise disclosed in the Registration Statement, the Disclosure Package and the Prospectus.

(o) Organization and Good Standing. The Company and each of its subsidiaries have been duly organized and are validly existing and in good standing under the laws of their respective jurisdictions of organization, are duly qualified to do business and are in good standing in each jurisdiction in which their respective ownership or lease of property or the conduct of their respective businesses requires such qualification, and have all power and authority necessary to own or hold their respective properties and to conduct the businesses in which they are engaged, except where the failure to be so qualified or in good standing or have such power or authority would not, individually or in the aggregate, have a material adverse effect on the business, properties, management, financial position, stockholders' equity, results of operations or prospects of the Company and its subsidiaries taken as a whole or on the performance by the Company of its obligations under this Agreement (a "**Material Adverse Effect**"). The Company does not own or control, directly or indirectly, any corporation, association or other entity, other than the subsidiaries listed in Exhibit 21.1 to the Company's Annual Report on Form 10-K for the most recently ended fiscal year other than (i) those subsidiaries not required to be listed on Exhibit 21.1 by Item 601 of Regulation S-K under the Exchange Act and (ii) those subsidiaries formed since the last day of the most recently ended fiscal year. Other than bluebird bio Securities Corporation, none of the subsidiaries of the Company is a "Significant Subsidiary," as defined by Rule 1-02(w) of Regulation S-X promulgated by the Commission.

(p) Capitalization. The Company has an authorized capitalization as set forth in the Registration Statement, the Disclosure Package and the Prospectus; all the outstanding shares of capital stock of the Company have been duly and validly authorized and issued and are fully paid and non-assessable and are not subject to any pre-emptive or similar rights that have not been duly waived or satisfied; except as described in or expressly contemplated by the Disclosure Package and the Prospectus, there are no outstanding rights (including, without limitation, pre-emptive rights), warrants or options to acquire, or instruments convertible into or exchangeable for, any shares of capital stock or other equity interest in the Company or any of its subsidiaries, or any contract, commitment, agreement, understanding or arrangement of any kind relating to the issuance of any capital stock of the Company or any such subsidiary, any such convertible or exchangeable securities or any such rights, warrants or options; the capital stock of the Company conforms in all material respects to the description thereof contained in the Registration Statement, the Disclosure Package and the Prospectus; and all the outstanding shares of capital stock or other equity interests of each subsidiary owned, directly or indirectly, by the Company have been duly and validly authorized and issued, are fully paid and non-assessable and are owned directly or indirectly by the Company, free and clear of any lien, charge, encumbrance, security interest, restriction on voting or transfer or any other claim of any third party. There are no debt securities or preferred stock of, or guaranteed by, the Company or any of its subsidiaries that are rated by a “nationally recognized statistical rating organization,” as such term is defined in Section 3(a)(62) of the Exchange Act.

(q) Stock Options. With respect to the stock options (the “**Stock Options**”) granted pursuant to the stock-based compensation plans of the Company (the “**Company Stock Plans**”), (i) to the Company’s knowledge, each Stock Option intended to qualify as an “incentive stock option” under Section 422 of the United States Internal Revenue Code of 1986, as amended (the “**Code**”) so qualifies, (ii) each grant of a Stock Option was duly authorized no later than the date on which the grant of such Stock Option was by its terms to be effective by all necessary corporate action, including, as applicable, approval by the Board of Directors of the Company (or a duly constituted and authorized committee thereof) and any required stockholder approval by the necessary number of votes or written consents, and the award agreement governing such grant (if any) was duly executed and delivered by each party thereto, (iii) each such grant was made in accordance with the terms of the Company Stock Plans and (iv) each such grant was properly accounted for in accordance with generally accepted accounting principles in the United States in the financial statements (including the related notes) of the Company. Since January 1, 2013, the Company has not knowingly granted, and there is no and has been no policy or practice of the Company of granting, Stock Options prior to, or otherwise coordinating the grant of Stock Options with, the release or other public announcement of material information regarding the Company or its subsidiaries or their results of operations or prospects.

(r) Due Authorization. The Company has full right, power and authority to execute and deliver this Agreement and to perform its obligations hereunder; and all action required to be taken for the due and proper authorization, execution and delivery by it of this Agreement and the consummation by it of the transactions contemplated hereby has been duly and validly taken.

(s) Equity Distribution Agreement. This Agreement has been duly authorized, executed and delivered by the Company.

(t) The Shares. The Shares to be issued and sold by the Company hereunder, when issued and delivered, will be duly authorized and, when issued and delivered by the Company against payment therefor as provided herein, will be duly and validly issued, fully paid and nonassessable and will conform in all material respects to the descriptions thereof in the Registration Statement, the Disclosure Package and the Prospectus; and the issuance of the Shares is not subject to any preemptive or similar rights that have not been duly waived.

(u) Descriptions of the Agreement. This Agreement conforms in all material respects to the description thereof contained in the Registration Statement, the Disclosure Package and the Prospectus.

(v) No Violation or Default. Neither the Company nor any of its subsidiaries is (i) in violation of its charter or by-laws or similar organizational documents; (ii) in default, and no event has occurred that, with notice or lapse of time or both, would constitute such a default, in the due performance or observance of any term, covenant or condition contained in any indenture, mortgage, deed of trust, loan agreement or other agreement or instrument to which the Company or any of its subsidiaries is a party or by which the Company or any of its subsidiaries is bound or to which any of the property or assets of the Company or any of its subsidiaries is subject; or (iii) in violation of any law or statute or any judgment, order, rule or regulation of any court or arbitrator or governmental or regulatory authority, except, in the case of clauses (ii) and (iii) above, for any such default or violation that would not, individually or in the aggregate, have a Material Adverse Effect.

(w) No Conflicts. The execution, delivery and performance by the Company of this Agreement, the issuance and sale of the Shares and the consummation by the Company of the transactions contemplated by this Agreement will not (i) conflict with or result in a breach or violation of any of the terms or provisions of, or constitute a default under, or result in the creation or imposition of any lien, charge or encumbrance upon any property or assets of the Company or any of its subsidiaries pursuant to, any indenture, mortgage, deed of trust, loan agreement or other agreement or instrument to which the Company or any of its subsidiaries is a party or by which the Company or any of its subsidiaries is bound or to which any of the property or assets of the Company or any of its subsidiaries is subject, (ii) result in any violation of the provisions of the charter or by-laws or similar organizational documents of the Company or any of its subsidiaries or (iii) result in the violation of any law or statute or any judgment, order, rule or regulation of any court or arbitrator or governmental or regulatory authority, except, in the case of clauses (i) and (iii) above, for any such conflict, breach, violation or default that would not, individually or in the aggregate, have a Material Adverse Effect.

(x) No Consents Required. No consent, approval, authorization, order, license, registration or qualification of or with any court or arbitrator or governmental or regulatory authority is required for the execution, delivery and performance by the Company of this Agreement, the issuance and sale of the Shares and the consummation of the transactions contemplated by this Agreement, except as may be required by the Nasdaq Global Select Market (“**Nasdaq**”) and under applicable state securities laws.

(y) Legal Proceedings. Except as described in the Registration Statement, the Disclosure Package and the Prospectus, there are no legal, governmental or regulatory investigations, actions, suits or proceedings pending to which the Company or any of its subsidiaries is a party or to which any property of the Company or any of its subsidiaries is the subject that, individually or in the aggregate, if determined adversely to the Company or any of its subsidiaries, would reasonably be expected to have a Material Adverse Effect; no such investigations, actions, suits or proceedings have been or are threatened or contemplated in writing or, to the knowledge of the Company, orally by any governmental or regulatory authority or by others; and (i) there are no current or pending legal, governmental or regulatory actions, suits or proceedings that are required under the Act to be described in the Registration Statement, the Disclosure Package or the Prospectus that are not so described in the Registration Statement, the Disclosure Package and the Prospectus and (ii) there are no statutes, regulations or contracts or other documents that are required under the Act to be filed as exhibits to the Registration Statement or described in the Registration Statement, the Disclosure Package or the Prospectus that are not so filed as exhibits to the Registration Statement or described in the Registration Statement, the Disclosure Package and the Prospectus.

(z) Independent Accountants. Ernst & Young LLP, who has certified certain financial statements of the Company and its subsidiaries, is an independent registered public accounting firm with respect to the Company and its subsidiaries within the applicable rules and regulations adopted by the Commission and the Public Company Accounting Oversight Board (United States) and as required by the Act.

(aa) Title to Real and Personal Property. The Company and its subsidiaries have good and marketable title in fee simple (in the case of real property) to, or have valid rights to lease or otherwise use, all items of real and personal property and assets that are material to the business of the Company and its subsidiaries taken as a whole, in each case free and clear of all liens, encumbrances, claims and defects and imperfections of title except those that (i) do not materially interfere with the use made and proposed to be made of such property by the Company and its subsidiaries or (ii) would not reasonably be expected, individually or in the aggregate, to have a Material Adverse Effect.

(bb) Intellectual Property Rights. Except as expressly contemplated by the Registration Statement, the Disclosure Package and the Prospectus, to the Company's knowledge, the Company and its subsidiaries own or have valid, binding and enforceable licenses or other rights under the patents and patent applications, copyrights, trademarks, trademark registrations, service marks, service mark registrations, trade names, service names and know-how (including trade secrets and other unpatented and/or unpatentable proprietary or confidential information, systems or procedures) that are material to the conduct, or the proposed conduct, of the business of the Company or its subsidiaries taken as a whole in the manner described in the Registration Statement, the Disclosure Package and the Prospectus (collectively, the "**Company Intellectual Property**"); to the knowledge of the Company, the material patents, trademarks, and copyrights included within the Company Intellectual Property are valid, enforceable, and subsisting; other than as disclosed in the Registration Statement, the Disclosure Package and the Prospectus, (i) neither the Company nor any of its subsidiaries is obligated to pay a material royalty, grant a license to any material portion of the Company Intellectual Property, or provide other material consideration to any third party in connection with the

Company Intellectual Property, (ii) neither the Company nor any of its subsidiaries has received any written notice of any claim of infringement, misappropriation or violation of any asserted intellectual property rights of a third party with respect to any of the Company's or its subsidiaries' products, proposed products, processes or Company Intellectual Property that, in each case, is material to the business of the Company and its subsidiaries taken as a whole, (iii) to the knowledge of the Company, neither the sale nor use of any of the discoveries, inventions, products, proposed products or processes of the Company or its subsidiaries referred to in the Registration Statement, the Disclosure Package or the Prospectus that, in each case, is material to the business of the Company and its subsidiaries taken as a whole infringe, interfere with or violate any valid patent claim of any third party, and (iv) to the knowledge of the Company, no third party has any ownership right in or to any Company Intellectual Property that is owned by the Company or its subsidiaries, other than any co-owner of any patent constituting Company Intellectual Property who is listed on the records of the U.S. Patent and Trademark Office (the "USPTO") for such patent and any co-owner of any patent application constituting Company Intellectual Property who is named in such patent application, and, to the knowledge of the Company, no third party has any ownership right in or to any Company Intellectual Property in any field of use that is exclusively licensed to the Company or any of its subsidiaries, other than any licensor to the Company of such Company Intellectual Property.

(cc) Patents and Patent Applications. As of the date of this Agreement, all material patents and patent applications owned by or licensed to the Company or any of its subsidiaries or under which the Company or any of its subsidiaries has rights have, to the knowledge of the Company, been duly and properly filed and maintained; to the knowledge of the Company, the parties prosecuting such applications have complied with their duty of candor and disclosure to the USPTO in connection with such applications; and, as of the date of this Agreement, the Company is not aware of any facts required to be disclosed to the USPTO that were not disclosed to the USPTO and which would preclude the grant of a patent in connection with any such application or could reasonably form the basis of a finding of invalidity with respect to any patents that have issued with respect to such applications.

(dd) No Undisclosed Relationships. No relationship, direct or indirect, exists between or among the Company or any of its subsidiaries, on the one hand, and the directors, officers, stockholders, customers or suppliers of the Company or any of its subsidiaries, on the other, that is required by the Act to be described in the Registration Statement and the Prospectus and that is not so described in such documents and in the Disclosure Package.

(ee) Investment Company Act. The Company is not and, after giving effect to the offering and sale of the Shares and the application of the proceeds thereof as described in the Registration Statement, the Disclosure Package and the Prospectus, will not be required to register as an "investment company" or an entity "controlled" by an "investment company" within the meaning of the Investment Company Act of 1940, as amended, and the rules and regulations of the Commission thereunder (collectively, the "**Investment Company Act**").

(ff) Taxes. The Company and its subsidiaries have paid all federal, state, local and foreign taxes and filed all tax returns required to be paid or filed through the date hereof except for taxes being contested in good faith and for which reserves in accordance with generally accepted accounting principles in the United States have been taken; and except as

otherwise disclosed in the Registration Statement, the Disclosure Package and the Prospectus, there is no material tax deficiency that has been, or would reasonably be expected to be, asserted against the Company or any of its subsidiaries or any of their respective properties or assets.

(gg) Licenses and Permits. The Company and its subsidiaries possess all licenses, certificates, registrations, approvals, permits, supplements or amendments, and other authorizations issued by, and have made all declarations and filings with, the appropriate federal, state, local or foreign governmental or regulatory authorities that, in each case, are material to the business of the Company and its subsidiaries taken as a whole for the ownership or lease of their respective properties or the conduct of their respective businesses as described in the Registration Statement, the Disclosure Package and the Prospectus (the “**Permits**”); and such Permits are valid and in full force and effect. Except as described in the Registration Statement, the Disclosure Package and the Prospectus, neither the Company nor any of its subsidiaries: (i) is in material violation of, or in default under, any of the Permits; (ii) has received notice of any material revocation, modification or termination of any such Permit; or (iii) has any reason to believe that any such Permit will not be renewed in the ordinary course for a material reason. To the knowledge of the Company, no event has occurred which allows, or after notice or lapse of time would allow, revocation or termination thereof or results in any other material impairment of the rights of the holder of any such Permit.

(hh) Summaries of Law and Documents. The statements set forth in the Registration Statement, the Disclosure Package and the Prospectus under the captions “Description of the Securities” and “Material U.S. Federal Income Tax Consequences to Non-U.S. Holders” insofar as such statements purport to constitute summaries of the terms of the statutes, rules or regulations, legal or governmental proceedings, agreements or documents referred to therein, are accurate summaries of the terms of such statutes, rules or regulations, legal or governmental proceedings, agreements or documents, in all material respects. All agreements expressly referenced in the Registration Statement, the Disclosure Package and the Prospectus between the Company or any of its subsidiaries, on the one hand, and any other party, on the other hand, are legal, valid and binding obligations of the Company or the relevant subsidiary and such other party, enforceable against the Company or the relevant subsidiary and such other party in accordance with their respective terms, subject to bankruptcy, insolvency, reorganization, moratorium or similar laws affecting creditors’ rights generally and to general equitable principles and except as rights to indemnity and contribution thereunder may be limited by applicable law or policies underlying such law. Except as described in the Registration Statement, the Disclosure Package and the Prospectus, none of the Company or any of its subsidiaries has sent or received any notice indicating the termination of or intention to terminate any of the contracts or agreements referred to, described in or incorporated by reference in the Registration Statement, the Disclosure Package and the Prospectus or filed as an exhibit Registration Statement.

(ii) No Labor Disputes. No labor disturbance by or dispute with employees of the Company or any of its subsidiaries exists or, to the knowledge of the Company, is contemplated or threatened, and the Company is not aware of any existing or imminent labor disturbance by, or dispute with, the employees of any of its or its subsidiaries’ principal suppliers, contractors or customers, except as, in each case, would not have a Material Adverse Effect.

(jj) Compliance with and Liability under Environmental Laws. (i) The Company and its subsidiaries (a) are in compliance with any and all applicable federal, state, local and foreign laws, rules, regulations, requirements, decisions, judgments, decrees, orders and the common law relating to pollution or the protection of the environment, natural resources or human health or safety, including those relating to the generation, storage, treatment, use, handling, transportation, Release or threat of Release of Hazardous Materials (collectively, “**Environmental Laws**”), (b) have received and are in compliance with all permits, licenses, certificates or other authorizations or approvals required of them under applicable Environmental Laws to conduct their respective businesses, if any, (c) have not received notice of any actual or potential liability under or relating to, or actual or potential violation of, any Environmental Laws, including for the investigation or remediation of any Release or threat of Release of Hazardous Materials, and have no knowledge of any event or condition that would reasonably be expected to result in any such notice, (d) are not conducting or paying for, in whole or in part, any investigation, remediation or other corrective action pursuant to any Environmental Law at any location, and (e) are not a party to any order, decree or agreement that imposes any obligation or liability under any Environmental Law; (ii) there are no costs or liabilities associated with Environmental Laws of or relating to the Company or its subsidiaries, except in the case of each of (i) and (ii) above, for any such matter, as would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect; and (iii) except as described in the Registration Statement, the Disclosure Package and the Prospectus, (a) there are no proceedings that are pending, or to the knowledge of the Company, contemplated, against the Company or any of its subsidiaries under any Environmental Laws in which a governmental entity is also a party, other than such proceedings regarding which it is reasonably believed no monetary sanctions of \$100,000 or more will be imposed, (b) the Company and its subsidiaries are not aware of any facts or issues regarding compliance with Environmental Laws, or liabilities or other obligations under Environmental Laws, including the Release or threat of Release of Hazardous Materials, that, individually or in the aggregate, would reasonably be expected to have a Material Adverse Effect, and (c) none of the Company and its subsidiaries anticipates material capital expenditures relating to any Environmental Laws.

(kk) Hazardous Materials. There has been no storage, generation, transportation, use, handling, treatment, Release or threat of Release of Hazardous Materials by, relating to or caused by the Company or any of its subsidiaries (or, to the knowledge of the Company and its subsidiaries, any other entity (including any predecessor) for whose acts or omissions the Company or any of its subsidiaries is or would reasonably be expected to be liable) at, on, under or from any property or facility now or previously owned, operated or leased by the Company or any of its subsidiaries, or at, on, under or from any other property or facility, in violation of any Environmental Laws or in a manner or amount or to a location that would reasonably be expected to result in any liability under any Environmental Law, except for any violation or liability which would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect. “**Hazardous Materials**” means any material, chemical, substance, waste, pollutant, contaminant, compound, mixture, or constituent thereof, in any form or amount, including petroleum (including crude oil or any fraction thereof) and petroleum products, natural gas liquids, asbestos and asbestos containing materials, naturally occurring radioactive materials, brine, and drilling mud, regulated or which can give rise to liability under any Environmental Law. “**Release**” means any spilling, leaking, seepage, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, disposing, depositing, dispersing, or migrating in, into or through the environment, or in, into from or through any building or structure.

(II) Compliance with ERISA. (i) Each employee benefit plan, within the meaning of Section 3(3) of the Employee Retirement Income Security Act of 1974, as amended (“ERISA”), for which the Company or any member of its “Controlled Group” (defined as any organization which is a member of a controlled group of corporations within the meaning of Section 414 of the Code) would have any liability (each, a “Plan”) has been maintained in compliance with its terms and the requirements of any applicable statutes, orders, rules and regulations, including but not limited to ERISA and the Code, except for noncompliance that could not reasonably be expected to result in material liability to the Company or its subsidiaries; (ii) no prohibited transaction, within the meaning of Section 406 of ERISA or Section 4975 of the Code, has occurred with respect to any Plan, excluding transactions effected pursuant to a statutory or administrative exemption, that would reasonably be expected to result in a material liability to the Company or its subsidiaries; (iii) for each Plan that is subject to the funding rules of Section 412 of the Code or Section 302 of ERISA, the minimum funding standard of Section 412 of the Code or Section 302 of ERISA, as applicable, has been satisfied (without taking into account any waiver thereof or extension of any amortization period) and is reasonably expected to be satisfied in the future (without taking into account any waiver thereof or extension of any amortization period); (iv) to the extent applicable to a Plan, the fair market value of the assets of each Plan exceeds the present value of all benefits accrued under such Plan (determined based on those assumptions used to fund such Plan); (v) no “reportable event” (within the meaning of Section 4043(c) of ERISA) has occurred or is reasonably expected to occur that either has resulted, or would reasonably be expected to result, in material liability to the Company or its subsidiaries; (vi) neither the Company nor any member of the Controlled Group has incurred, nor reasonably expects to incur, any liability under Title IV of ERISA (other than contributions to the Plan or premiums to the PBGC, in the ordinary course and without default) in respect of a Plan (including a “multiemployer plan”, within the meaning of Section 4001(a)(3) of ERISA); and (vii) there is no pending audit or investigation by the Internal Revenue Service, the U.S. Department of Labor, the Pension Benefit Guaranty Corporation or any other governmental agency or any foreign regulatory agency with respect to any Plan that would reasonably be expected to result in material liability to the Company or its subsidiaries. None of the following events has occurred or is reasonably likely to occur: (x) a material increase in the aggregate amount of contributions required to be made to all Plans by the Company or its subsidiaries in the current fiscal year of the Company and its subsidiaries compared to the amount of such contributions made in the Company and its subsidiaries’ most recently completed fiscal year; or (y) a material increase in the Company and its subsidiaries’ “accumulated post-retirement benefit obligations” (within the meaning of Statement of Financial Accounting Standards 106) compared to the amount of such obligations in the Company and its subsidiaries’ most recently completed fiscal year.

(mm) Disclosure Controls. The Company and its subsidiaries maintain an effective system of “disclosure controls and procedures” (as defined in Rule 13a-15(e) of the Exchange Act) that complies with the requirements of the Exchange Act and that has been designed to ensure that information required to be disclosed by the Company in reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the Commission’s rules and forms, including controls and

procedures designed to ensure that such information is accumulated and communicated to the Company's management as appropriate to allow timely decisions regarding required disclosure. The Company has carried out evaluations of the effectiveness of its disclosure controls and procedures as required by Rule 13a-15 of the Exchange Act.

(nn) Accounting Controls. The Company and its subsidiaries maintain systems of "internal control over financial reporting" (as defined in Rule 13a-15(f) of the Exchange Act) that are designed to comply with the requirements of the Exchange Act and have been designed by, or under the supervision of, the Company's principal executive and principal financial officers, or persons performing similar functions, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles in the United States, including, but not limited to, internal accounting controls sufficient to provide reasonable assurance that (i) transactions are executed in accordance with management's general or specific authorizations; (ii) transactions are recorded as necessary to permit preparation of financial statements in conformity with generally accepted accounting principles and to maintain asset accountability; (iii) access to assets is permitted only in accordance with management's general or specific authorization; (iv) the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action is taken with respect to any differences; and (v) interactive data in eXtensible Business Reporting Language included or incorporated by reference in the Registration Statement fairly presents the information called for in all material respects and is prepared in accordance with the Commission's rules and guidelines applicable thereto. Except as disclosed in the Registration Statement, the Disclosure Package and the Prospectus, there are no material weaknesses in the Company's internal controls. The Company's auditors and the Audit Committee of the Board of Directors of the Company have been advised of: (i) all significant deficiencies and material weaknesses, if any, in the design or operation of internal controls over financial reporting which have adversely affected or are reasonably likely to adversely affect the Company's ability to record, process, summarize and report financial information; and (ii) to the knowledge of the Company, any fraud, whether or not material, that involves management or other employees who have a significant role in the Company's internal controls over financial reporting.

(oo) eXtensible Business Reporting Language. The interactive data in eXtensible Business Reporting Language included or incorporated by reference in the Registration Statement fairly presents the information called for in all material respects and has been prepared in accordance with the Commission's rules and guidelines applicable thereto.

(pp) Insurance. The Company and its subsidiaries have insurance covering their respective properties, operations, personnel and businesses, including business interruption insurance, which insurance is in amounts and insures against such losses and risks as are generally maintained by companies engaged in the same or similar business and which the Company reasonably believes are adequate to protect the Company and its subsidiaries and their respective businesses; and neither the Company nor any of its subsidiaries has (i) received notice from any insurer or agent of such insurer that capital improvements or other expenditures are required or necessary to be made in order to continue such insurance or (ii) 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 at reasonable cost from similar insurers as may be necessary to continue its business.

(qq) No Unlawful Payments. Neither the Company nor any of its subsidiaries nor, to the knowledge of the Company, any director, officer, agent, employee or other person associated with or authorized to act on behalf of the Company or any of its subsidiaries has (i) used any corporate funds for any unlawful contribution, gift, entertainment or other unlawful expense relating to political activity; (ii) made any direct or indirect unlawful payment to any foreign or domestic government official or employee from corporate funds; (iii) violated or is in violation of any provision of the Foreign Corrupt Practices Act of 1977, the Bribery Act 2010 of the United Kingdom or any other applicable anti-bribery or anti-corruption laws; or (iv) made any bribe, rebate, payoff, influence payment, kickback or other unlawful payment.

(rr) Compliance with Money Laundering Laws. The operations of the Company and its subsidiaries are and have been conducted at all times in compliance with applicable financial recordkeeping and reporting requirements of the Currency and Foreign Transactions Reporting Act of 1970, as amended, the money laundering statutes of all jurisdictions, the rules and regulations thereunder and any related or similar rules, regulations or guidelines, issued, administered or enforced by any governmental agency (collectively, the “**Money Laundering Laws**”) and no action, suit or proceeding by or before any court or governmental agency, authority or body or any arbitrator involving the Company or any of its subsidiaries with respect to the Money Laundering Laws is pending or, to the knowledge of the Company, threatened.

(ss) Compliance with OFAC. None of the Company, any of its subsidiaries or, to the knowledge of the Company, any director, officer, agent, employee or affiliate of the Company or any of its subsidiaries is currently the subject or the target of any U.S. sanctions (“**Sanctions**”) administered or enforced by the Office of Foreign Assets Control of the U.S. Department of the Treasury (“**OFAC**”) or other relevant Sanctions authority; and the Company will not, directly or indirectly, use the proceeds of the offering of the Shares hereunder, or lend, contribute or otherwise make available such proceeds to any subsidiary, joint venture partner or other person or entity, (i) for the purpose of financing the activities of or business with any person, or in any country or territory, that, at the time of such funding, is subject to any Sanctions or (ii) in any other manner that will result in a violation by any person (including any person participating in the transaction, whether as underwriter, advisor, investor or otherwise) of Sanctions.

(tt) No Restrictions on Subsidiaries. No subsidiary of the Company is currently prohibited, directly or indirectly, under any agreement or other instrument to which it is a party or is subject, from paying any dividends to the Company, from making any other distribution on such subsidiary’s capital stock, from repaying to the Company any loans or advances to such subsidiary from the Company or from transferring any of such subsidiary’s properties or assets to the Company or any other subsidiary of the Company.

(uu) No Broker’s Fees. Neither the Company nor any of its subsidiaries is a party to any contract, agreement or understanding with any person (other than this Agreement) that would give rise to a valid claim against the Company or any of its subsidiaries or any the Manager for a brokerage commission, finder’s fee or like payment in connection with the offering and sale of the Shares.

(vv) No Registration Rights. Except as described in the Registration Statement, the Disclosure Package and the Prospectus, no person has the right to require the Company or any of its subsidiaries to register any securities for sale under the Act by reason of the filing of the Registration Statement with the Commission or the issuance and sale of the Shares, other than rights that have been validly waived.

(ww) No Stabilization. The Company has not taken, directly or indirectly, any action designed to or that would reasonably be expected to cause or result in any stabilization or manipulation of the price of the Shares.

(xx) FINRA Affiliation. To the knowledge of the Company, there are no affiliations or associations between any member of FINRA and any of the officers or directors of the Company or the holders of 5% or greater of the Common Stock, except as described in the Registration Statement, the Disclosure Package and the Prospectus.

(yy) Margin Rules. The application of the proceeds received by the Company from the issuance, sale and delivery of the Shares as described in the Registration Statement, the Disclosure Package and the Prospectus will not violate Regulation T, U or X of the Board of Governors of the Federal Reserve System or any other regulation of such Board of Governors.

(zz) Forward-Looking Statements. No forward-looking statement (within the meaning of Section 27A of the Act and Section 21E of the Exchange Act) contained in the Registration Statement, the Disclosure Package or the Prospectus has been made or reaffirmed without a reasonable basis or has been disclosed other than in good faith.

(aaa) Statistical and Market Data. Nothing has come to the attention of the Company that has caused the Company to believe that the statistical and market-related data included or incorporated by reference in the Registration Statement, the Disclosure Package and the Prospectus is not based on or derived from sources that are reliable and accurate in all material respects.

(bbb) Tests and Clinical and Nonclinical Studies. The tests and nonclinical and clinical studies that are described in the Registration Statement, the Disclosure Package and the Prospectus were and, if still pending, are being, conducted in all material respects in accordance with the protocols submitted to the U.S. Food and Drug Administration (the “**FDA**”), the European Medicines Agency (the “**EMA**”) or any foreign governmental body exercising comparable authority, procedures and controls pursuant to, where applicable, accepted professional and scientific standards, and all applicable laws and regulations, including Applicable Laws as defined in (ddd) below; the descriptions of the tests and nonclinical and clinical studies conducted by or, to the Company’s knowledge, on behalf of the Company, and the results thereof, contained in the Registration Statement, the Disclosure Package and the Prospectus are accurate in all material respects; the Company is not aware of any other tests or nonclinical or clinical studies, the results of which reasonably call into question the results described in the Registration Statement, the Disclosure Package and the Prospectus; and, except

as disclosed in the Registration Statement, the Disclosure Package and the Prospectus, the Company has not received any written notices or correspondence from the FDA, any foreign, state or local governmental body exercising comparable authority or any Institutional Review Board requiring the termination, suspension or clinical hold of any tests or nonclinical or clinical studies conducted by or on behalf of the Company.

(ccc) Regulatory Matters. Except as described in the Registration Statement, the Disclosure Package and the Prospectus: (i) neither the Company nor any of its subsidiaries has received any FDA Form 483, notice of adverse finding, warning letter, untitled letter or other correspondence or notice from the FDA or any other governmental entity alleging or asserting any material noncompliance with any Applicable Laws (as defined in clause (ii) below), and there have been no recalls, field notifications, field corrections, market withdrawals or replacements, “dear doctor” letters, or safety alerts relating to an alleged lack of safety, efficacy or regulatory compliance of any of the Company’s products; (ii) the Company and each of its subsidiaries is and has been in material compliance with statutes, laws, ordinances, rules and regulations applicable to the Company and its subsidiaries and their respective activities, including for the ownership, testing, research, development, manufacture, quality, safety, packaging, use, distribution, marketing, labeling, advertising, promotion, sale, offer for sale, storage, record-keeping, import, export or disposal of any product developed, manufactured or distributed by the Company, including the Federal Food, Drug, and Cosmetic Act (21 U.S.C. § 301, et seq.), the Public Health Service Act (42 U.S.C. § 201 et seq.), and comparable laws of other governmental entities and the regulations promulgated pursuant to such laws (collectively, “**Applicable Laws**”); (iii) neither the Company nor any of its subsidiaries has received notice of any ongoing claim, action, suit, proceeding, hearing, enforcement, investigation, arbitration or other action from any governmental entity or third party alleging that any product, operation or activity is in material violation of any Applicable Laws or Permits or has any knowledge that any such governmental entity or third party has threatened any such claim, litigation, arbitration, action, suit, investigation or proceeding; (iv) the Company and each of its subsidiaries has timely filed, obtained, maintained or submitted all material reports, documents, forms, notices, applications, records, claims, submissions and supplements or amendments as required by any Applicable Laws or Permits and, to the Company’s knowledge, all such reports, documents, forms, notices, applications, records, claims, submissions and supplements or amendments were complete, correct and not misleading in all material respects on the date filed (or were corrected or supplemented by a subsequent submission). To the Company’s knowledge, neither the Company, any subsidiary nor any of its directors, officers, employees or agents, has made, or caused the making of, any material false statements on, or material omissions from, any other records or documentation prepared or maintained to comply with the requirements of the FDA or any other governmental entity. To the Company’s knowledge, neither the Company, any of its subsidiaries nor any of its directors, officers, employees, agents, employees or affiliates have committed any act, made any statement or failed to make any statement that would reasonably be expected to provide a basis for the FDA or any other governmental or regulatory authority to invoke its policy with respect to “Fraud, Untrue Statements of Material Facts, Bribery, and Illegal Gratuities,” or similar policies, set forth in any Health Care Law (as defined below).

(ddd) Healthcare Law Compliance. Except to the extent disclosed in each of the Registration Statement, the Disclosure Package or the Prospectus, (i) each of the Company and its subsidiaries is and has been, since January 1, 2016, in material compliance with all applicable

healthcare laws and regulations, including, without limitation, the federal Anti-Kickback Statute (42 U.S.C. § 1320a-7b(b)), the Civil Monetary Penalties Law (42 U.S.C. § 1320a-7a), the civil False Claims Act (31 U.S.C. §§ 3729 et seq.), the administrative False Claims Law (42 U.S.C. § 1320a-7b(a)), the federal Physician Payment Sunshine Act (42 U.S.C. § 1320a-7h), all criminal laws relating to health care fraud and abuse, the exclusion laws (42 U.S.C. § 1320a-7), the Medicare statute (Title XVIII of the Social Security Act), the Medicaid statute (Title XIX of the Social Security Act), all applicable federal, state, local laws governing scope and permissible interactions between pharmaceutical manufacturers and health care providers, laws governing government pricing or price reporting programs and regulations promulgated thereunder, manufacturer and wholesaler licensure requirements, quality, safety and accreditation requirements, state analogues of any such laws to the extent not referenced expressly in the foregoing, any and all other health care laws and regulations applicable to the Company or its subsidiaries or their respective businesses, each as currently conducted, and the regulations and guidances promulgated pursuant to any such laws and programs, as well as industry guidance governing relationships with health care providers (collectively, the “**Health Care Laws**”); (ii) neither the Company nor any of its subsidiaries, nor any director, officer, employee, nor, to the Company’s knowledge, any agent of the Company or any of its subsidiaries: (a) is or has been suspended, excluded, debarred, or otherwise ineligible to participate in any government health care program or contact with any government authority, debarred by FDA or comparable authorities pursuant to 21 U.S.C. § 335a and the Company periodically conducts screening of such persons to confirm such persons are not excluded, suspected or debarred from participation; (b) has been convicted of any criminal offense relating to the delivery of an item or service under Medicare, Medicaid or any other government health care program, or (c) to the knowledge of the Company, is the target or subject of any current or potential investigation relating to any Medicare, Medicaid or any other government health care program related offense; (iii) neither the Company nor any of its subsidiaries has received any written notification, correspondence or any other written communication of any pending or threatened claim, suit, proceeding, hearing, enforcement, audit, investigation, arbitration or other action from any governmental entity or any third party, including employees, former employees or competitors alleging that any operation or activity of the Company or any of its subsidiaries is, or potentially is, in violation of any Health Care Law; (iv) neither the Company nor any of its subsidiaries is a party to any corporate integrity agreements, monitoring agreements, deferred prosecution agreements, consent decrees, settlement orders, or similar agreements with or imposed by any governmental entity and no such agreement, decree or order is pending, and (viii) the Company and each of its subsidiaries maintains an operational healthcare compliance program that: (a) is designed to detect effectively non-compliance with Health Care Laws; (b) governs all employees and contractors, including sales representatives; (c) is materially consistent with the current U.S. Federal Sentencing Guidelines standards for effective compliance programs and U.S. Department of Health and Human Services Office of Inspector General Voluntary Compliance Guidance for Pharmaceutical Manufacturers; (d) complies in with the Pharmaceutical Research and Manufacturers of America Code on Interactions with Healthcare Professionals; and (e) addresses compliance with Health Care Laws.

(eee) Sarbanes-Oxley Act. There is and has been no failure on the part of the Company or, to the knowledge of the Company, any of the Company’s directors or officers, in their capacities as such, to comply with any applicable provision of the Sarbanes-Oxley Act of

2002 and the rules and regulations promulgated in connection therewith, including Section 402 related to loans and Sections 302 and 906 related to certificates.

(fff) Data Privacy. To the Company's knowledge, each of the Company and its subsidiaries currently is, and has operated, in material compliance with all applicable data privacy and security laws and regulations (collectively, the "**Privacy Laws**"), including without limitation the Health Insurance Portability and Accountability Act of 1996 ("**HIPAA**") (42 U.S.C. Section 1320d et seq.), as amended by the Health Information Technology for Economic and Clinical Health Act (42 U.S.C. Section 17921 et seq.) and its implementing regulations for which any non-compliance would be reasonably likely to create a material liability. To ensure compliance with the Privacy Laws, the Company and its subsidiaries have in place policies and procedures relating to data privacy and security and the collection, storage, use, disclosure, handling, and analysis of any Personal Data (the "**Policies**") and take appropriate steps reasonably designed to ensure compliance in all material respects with such Policies. "**Personal Data**" means any personal or personally identifiable data regulated under the Privacy Laws. Where required by applicable Privacy Laws, the Company has provided accurate notice of its Policies then in effect to its customers, employees, third-party vendors and representatives in all material respects. Each of the Company's notices regarding the Company's Policies (i) provides accurate and sufficient notice of the Company's then-current privacy practices relating to its subject matter; and (ii) does not contain any material omissions of the Company's then-current privacy practices relating to its subject matter. The Company further certifies that neither it nor any of its subsidiaries: (a) has received notice of any actual or alleged violation of any of the Privacy Laws; or (b) is a party to any order, decree, or settlement agreement that imposes any obligation or liability by any governmental or regulatory authority under any Privacy Law.

(ggg) IT Systems. Each of the Company's and its subsidiaries' information technology assets and equipment, computers, systems, networks, hardware, software, websites, applications, and databases (collectively, "**IT Systems**") are adequate for, and operate and perform in all material respects as required in connection with the operation of the business of the Company and the subsidiaries as currently conducted, and to the knowledge of the Company are free and clear of all material bugs, errors, defects, Trojan horses, time bombs, malware and other corruptants. The Company and the subsidiaries have implemented and maintained commercially reasonable necessary controls, policies, procedures, and safeguards to maintain and protect their material confidential information and the integrity, continuous operation, redundancy and security of all IT Systems and data (including all Personal Data, sensitive, confidential or regulated data ("**Confidential Data**")) used in connection with their businesses, and, to the Company's knowledge, there have been no breaches, violations, outages or unauthorized uses of or accesses to same, except for those that have been remedied without material cost or liability or the duty to notify any other person nor any incidents under internal review or investigations relating to the same.

The Company acknowledges that the Manager and, for purposes of the opinions to be delivered pursuant to Section 4 hereof, counsel for the Company and counsel for the Manager, will rely upon the accuracy and truthfulness of the foregoing representations and hereby consents to such reliance.

3. **Sale and Delivery of Shares.** On the basis of the representations, warranties and agreements herein contained, but subject to the terms and conditions herein set forth, the Company and the Manager agree that the Company may from time to time seek to sell Shares through the Manager or directly to the Manager as principal, as follows:

(a) The Company may submit to the Manager its orders (including any price, time or size limits or other customary parameters or conditions) to sell Shares by delivering to the Manager a sales notice (each, a “**Sales Notice**”) substantially in the form set forth in Annex II hereto on any Trading Day (as defined herein). As used herein, “**Trading Day**” shall mean any trading day on Nasdaq.

(b) Subject to the terms and conditions hereof, the Manager shall use its reasonable efforts to execute any Company order submitted to it pursuant to a Sales Notice to sell Shares and with respect to which the Manager has agreed to act as sales agent. The Company acknowledges and agrees that (i) there can be no assurance that the Manager will be successful in selling the Shares, (ii) the Manager will incur no liability or obligation to the Company or any other person or entity if it does not sell Shares for any reason other than a failure by the Manager to use its reasonable efforts consistent with its normal trading and sales practices and applicable law and regulations to sell such Shares as required under this Agreement and (iii) the Manager shall not be under any obligation to purchase Shares on a principal basis pursuant to this Agreement, except as otherwise specifically agreed by Manager and the Company. The Manager may make sales pursuant to each order by any method permitted by law, including without limitation (i) by means of ordinary brokers’ transactions (whether or not solicited), (ii) to or through a market maker, (iii) directly on or through any national securities exchange or facility thereof, a trading facility of a national securities association, an alternative trading system, or any other market venue, (iv) in the over-the-counter market, (v) in privately negotiated transactions, or (vi) through a combination of any such methods.

(c) The Company shall not authorize the issuance and sale of, and the Manager shall not sell as sales agent, any Share at a price lower than the minimum price therefor designated from time to time by the Company and notified to the Manager in writing. In addition, the Company or the Manager may upon notice to the other party hereto by telephone (confirmed promptly by email or facsimile), suspend an offering of the Shares with respect to which the Manager is acting as sales agent; *provided, however*, that such suspension or termination shall not affect or impair the parties’ respective obligations with respect to the Shares sold hereunder prior to the giving of such notice.

(d) The compensation to the Manager for sales of the Shares with respect to which the Manager acts as sales agent hereunder shall be up to 3% of the gross offering proceeds of the Shares sold pursuant to this Agreement as mutually agreed to in writing by the Manager and the Company. The foregoing rate of compensation shall not apply when the Manager, acting as principal, purchases Shares from the Company pursuant to a Terms Agreement. Any compensation or commission due and payable to the Manager hereunder with respect to any sale of Shares shall be paid by the Company to the Manager concurrently with the settlement for sales of the Shares by deduction from the proceeds from sales of the Shares payable to the Company. The remaining proceeds, after further deduction for any transaction fees imposed by any governmental or self-regulatory organization in respect of such sales shall constitute the net proceeds to the Company for such Shares (the “**Net Proceeds**”).

(e) Settlement for sales of the Shares pursuant to this Agreement will occur on the second Trading Day following the date on which such sales are made (each such day, a “**Settlement Date**”). On each Settlement Date, the Shares sold through the Manager for settlement on such date shall be issued and delivered by the Company to the Manager against payment of the Net Proceeds from the sale of such Shares. Settlement for all such Shares shall be effected by free delivery of the Shares, in definitive form, by the Company or its transfer agent to the Manager’s or its designee’s account (*provided* the Manager shall have given the Company written notice of such designee prior to the Settlement Date) at The Depository Trust Company through its Deposit and Withdrawal at Custodian System or by such other means of delivery as may be mutually agreed upon by the parties hereto, in return for payments in same day funds delivered to the account designated by the Company. If the Company, or its transfer agent (if applicable) shall default on its obligation to deliver the Shares on any Settlement Date, the Company shall (i) hold the Manager harmless against any loss, claim, damage, or expense (including reasonable legal fees and expenses), as incurred, arising out of or in connection with such default by the Company and (ii) pay each the Manager any commission, discount or other compensation to which it would otherwise be entitled absent such default.

(f) If acting as sales agent hereunder, the Manager shall provide written confirmation (which may be by facsimile or email) to the Company following the close of trading on Nasdaq each day in which the Shares are sold under this Agreement setting forth (i) the amount of the Shares sold on such day and the gross offering proceeds received from such sale and (ii) the commission payable by the Company to the Manager with respect to such sales.

(g) At each Applicable Time, Settlement Date, Representation Date (as defined in Section 4(k)) and Filing Date (as defined in Section 4(s)), the Company shall be deemed to have affirmed each representation and warranty contained in this Agreement as if such representation and warranty were made as of such date, modified as necessary to relate to the Registration Statement and the Prospectus as amended as of such date. Any obligation of the Manager to use its reasonable efforts as sales agent to sell the Shares on behalf of the Company shall be subject to the continuing accuracy of the representations and warranties of the Company herein (and the completion of any reasonable diligence to verify such accuracy by the Manager), to the performance by the Company of its obligations hereunder and to the continuing satisfaction of the additional conditions specified in Section 6 of this Agreement.

(h) Subject to such further limitations on offers and sales of Shares or delivery of instructions to offer and sell Shares as are set forth herein and as may be mutually agreed upon by the Company and the Manager, the Company shall not request the sale of any Shares to be sold, and the Manager shall not be obligated to sell, (i) during any period in which the Company’s insider trading policy, as it exists on the date of this Agreement, would prohibit the purchase or sale of any Shares by any of its officers or directors, (ii) any time during the period commencing on the fifth business day prior to the time Company shall issue a press release containing, or shall otherwise publicly announce, its earnings, revenues or other results of operations (each, an “**Earnings Announcement**”) through and including the time that is 24

hours after the time that the Company files (a “**Filing Time**”) a Quarterly Report on Form 10-Q or an Annual Report on Form 10-K that includes consolidated financial statements as of and for the same period or periods, as the case may be, covered by such Earnings Announcement, or (iii) during any other period in which the Company is, or could be deemed to be, in possession of material non-public information.

(i) If the Company wishes to issue and sell the Shares pursuant to this Agreement directly to the Manager acting as principal (each, a “**Placement**”), it will notify the Manager of the proposed terms of such Placement. If the Manager, acting as principal, wishes to accept such proposed terms (which the Manager may decline to do for any reason in its sole discretion) or, wishes to accept amended terms proposed by the Company after further discussion, the Manager and the Company will enter into a Terms Agreement setting forth the terms of such Placement. The terms set forth in a Terms Agreement will not be binding on the Company or the Manager unless and until each such party has executed such Terms Agreement accepting all of the terms of such Terms Agreement. In the event of a conflict between the terms of this Agreement and the terms of a Terms Agreement, the terms of such Terms Agreement will control.

(j) Each Placement shall be made in accordance with the terms of this Agreement and, if applicable, a Terms Agreement, which will provide for the sale of such Shares to, and the purchase thereof by, the Manager. A Terms Agreement may also specify certain provisions relating to the reoffering of such Shares by the Manager. The commitment of the Manager to purchase the Shares pursuant to any Terms Agreement shall be deemed to have been made on the basis of the representations and warranties of the Company herein contained and shall be subject to the terms and conditions herein set forth. Each Terms Agreement shall specify the number of the Shares to be purchased by the Manager pursuant thereto, the price to be paid to the Company for such Shares, any provisions relating to rights of, and default by, underwriters acting together with the Manager in the reoffering of the Shares, and the time and date (each such time and date being referred to herein as a “**Time of Delivery**”) and place of delivery of and payment for such Shares.

(k) Under no circumstances shall the number and aggregate amount of the Shares sold pursuant to this Agreement and any Terms Agreement exceed (i) the aggregate amount set forth in Section 1, (ii) the number of shares of Common Stock available for issuance under the currently effective Registration Statement or (iii) the number and aggregate amount of the Shares authorized from time to time to be issued and sold under this Agreement by the board of directors of the Company (the “**Board**”), or a duly authorized committee thereof, and notified to the Manager in writing.

4. Agreements. The Company agrees with the Manager that:

(a) During any period when the delivery of a prospectus relating to the Shares is required (including in circumstances where such requirement may be satisfied pursuant to Rule 172 or any similar rule) to be delivered under the Act in connection with the offering or sale of the Shares, the Company will not file any amendment of the Registration Statement or supplement insofar as it relates to the transactions contemplated hereby in connection with the offering and sale of the Shares (including the Prospectus Supplement or any Interim Prospectus

Supplement) to the Base Prospectus, the Disclosure Package or the Prospectus, whether pursuant to the Act, the Exchange Act or otherwise, unless (i) the Company has furnished to the Manager a copy of such amendment or supplement (including, for the avoidance of doubt, reports or other information to be filed by the Company under the Exchange Act that would be incorporated by reference into the Registration Statement and Prospectus) for its review a reasonable period of time prior to filing (or, in the case of Current Reports on Form 8-K, has used its commercially reasonable efforts to so furnish copies to the Manager prior to filing), and (ii) except for reports or other information required to be filed by the Company under the Exchange Act, the Company will not file any such proposed amendment or supplement to which the Manager reasonably objects. The Company has prepared the Prospectus, in a form approved by the Manager, and shall file such Prospectus, as amended at the Execution Time, with the Commission pursuant to the applicable paragraph of Rule 424(b) promptly after the Execution Time (but in any event within the time period described thereby) and will cause any supplement to the Prospectus to be prepared, in a form approved by the Manager, and will file such supplement with the Commission pursuant to the applicable paragraph of Rule 424(b) within the time period prescribed thereby and will notify the Manager of such timely filing. The Company, subject to this Section 4(a) and Section 4(c), will comply with the requirements of Rule 430B. During any period when the delivery of a prospectus relating to the Shares is required (including in circumstances where such requirement may be satisfied pursuant to Rule 172 or any similar rule) to be delivered under the Act in connection with the offering or sale of the Shares, the Company will promptly advise the Manager (A) when the Prospectus, and any supplement thereto, shall have been filed (if required) with the Commission pursuant to Rule 424(b), (B) when, during any period when the delivery of a prospectus (whether physically or through compliance with Rule 172 or any similar rule) is required under the Act in connection with the offering or sale of the Shares, any amendment to the Registration Statement or any new registration statement relating to the Shares shall have been filed or become effective (other than a prospectus supplement relating solely to the offering of securities other than the Shares), (C) of the receipt of any comments from the Commission (D) of any request by the Commission or its staff for any amendment of the Registration Statement, or for any supplement to the Prospectus or for any additional information, (E) of the issuance by the Commission of any stop order suspending the effectiveness of the Registration Statement or of any notice objecting to its use or any the issuance of any order preventing or suspending the use of the Prospectus or any amendment or supplement thereto, or the institution or threatening of any proceeding for any of such purposes or pursuant to Section 8A of the Act or (F) of the receipt by the Company of any notification with respect to the suspension of the qualification of the Shares for sale in any jurisdiction or the institution or threatening of any proceeding for such purpose. The Company will use its reasonable best efforts to prevent the issuance of any such stop order or the occurrence of any such suspension or objection to the use of the Registration Statement and, upon such issuance, occurrence or notice of objection, to obtain at the earliest possible moment the withdrawal of such stop order or relief from such occurrence or objection, including, if necessary, by filing an amendment to the Registration Statement or a new registration statement and using its best efforts to have such amendment or new registration statement declared effective as soon as practicable.

(b) If, at any time on or after an Applicable Time but prior to the related Settlement Date or Time of Delivery, any event occurs as a result of which the Disclosure Package would include any untrue statement of a material fact or omit to state any material fact

necessary to make the statements therein in the light of the circumstances under which they were made or the circumstances then prevailing not misleading, the Company will (i) notify promptly the Manager so that any use of the Disclosure Package may cease until it is amended or supplemented; (ii) amend or supplement the Disclosure Package to correct such statement or omission; and (iii) supply any amendment or supplement to the Manager in such quantities as it may reasonably request.

(c) During any period when the delivery of a prospectus relating to the Shares is required (including in circumstances where such requirement may be satisfied pursuant to Rule 172 or any similar rule) to be delivered under the Act, if any event occurs as a result of which the Prospectus as then supplemented would include any untrue statement of a material fact or omit to state any material fact necessary to make the statements therein in the light of the circumstances under which they were made at such time not misleading, or if it shall be necessary to amend the Registration Statement, file a new registration statement or supplement the Prospectus to comply with the Act or the Exchange Act or the respective rules thereunder, including in connection with use or delivery of the Prospectus, the Company promptly will (i) notify the Manager of any such event, (ii) prepare and file with the Commission, subject to the first sentence of paragraph (a) of this Section 4, an amendment or supplement or new registration statement which will correct such statement or omission or effect such compliance, (iii) use its best efforts to have any amendment to the Registration Statement or new registration statement declared effective as soon as practicable in order to avoid any disruption in use of the Prospectus and (iv) supply any supplemented Prospectus to the Manager in such quantities as it may reasonably request.

(d) As soon as practicable, the Company will make generally available (which may be satisfied by filing on EDGAR) to its security holders and to the Manager an earnings statement or statements of the Company and its subsidiaries which will satisfy the provisions of Section 11(a) of the Act and Rule 158.

(e) The Company will deliver to the Manager and counsel for the Manager, without charge, as the Manager or its counsel may reasonably request, signed copies of the Registration Statement as originally filed and of each amendment thereto (including exhibits filed therewith or incorporated by reference therein and documents incorporated or deemed to be incorporated by reference therein) and signed copies of all consents and certificates of experts. The Registration Statement and each amendment thereto furnished to the Manager will be identical to any electronically transmitted copies thereof filed with the Commission pursuant to EDGAR, except to the extent permitted by Regulation S-T. The Company will pay the expenses of printing or other production of all documents relating to the offering.

(f) The Company will deliver the Manager and its counsel, without charge, for so long as delivery of a prospectus by the Manager or dealer may be required by the Act (including in circumstances where such requirement may be satisfied pursuant to Rule 172 or any similar rule), as many copies of the Prospectus and each Issuer Free Writing Prospectus and any supplement thereto as the Manager may reasonably request. The Prospectus and any Issuer Free Writing Prospectus and any amendments or supplements thereto furnished to the Manager will be identical to any electronically transmitted copies thereof filed with the Commission pursuant to EDGAR, except to the extent permitted by Regulation S-T. The Company will pay the expenses of printing or other production of all documents relating to the offering.

(g) The Company will arrange, if necessary, for the qualification of the Shares for sale under the laws of such jurisdictions as the Manager may designate and will maintain such qualifications in effect so long as required for the distribution of the Shares; *provided* that in no event shall the Company be obligated to qualify to do business in any jurisdiction where it is not now so qualified or to take any action that would subject it to service of process in suits, other than those arising out of the offering or sale of the Shares, in any jurisdiction where it is not now so subject or where it would be subject to taxation as a foreign business.

(h) The Company agrees that, unless it has or shall have obtained, as the case may be, the prior written consent of the Manager, and the Manager agrees with the Company that, unless it has or shall have obtained, as the case may be, the prior written consent of the Company, it has not made and will not make any offer relating to the Shares that would constitute an Issuer Free Writing Prospectus or that would otherwise constitute a “free writing prospectus” (as defined in Rule 405) required to be filed by the Company with the Commission or retained by the Company under Rule 433; *provided* that the prior written consent of the parties hereto shall be deemed to have been given in respect of the Free Writing Prospectuses included in Schedule I hereto. Any such free writing prospectus consented to by the Manager or the Company is hereinafter referred to as a “**Permitted Free Writing Prospectus**.” The Company agrees that (i) it has treated and will treat, as the case may be, each Permitted Free Writing Prospectus as an Issuer Free Writing Prospectus and (ii) it has complied and will comply, as the case may be, with the requirements of Rules 164 and 433 applicable to any Permitted Free Writing Prospectus, including in respect of timely filing with the Commission, legending and record keeping.

(i) The Company will not (i) take, directly or indirectly, any action designed to or that might reasonably be expected to cause or result in stabilization or manipulation of the price of any security of the Company to facilitate the sale or resale of the Shares or (ii) sell, bid for, purchase or pay any person (other than as contemplated by this Agreement or any Terms Agreement) any compensation for soliciting purchases of the Shares.

(j) The Company will, at any time during the term of this Agreement, as supplemented from time to time, advise the Manager promptly after it shall have received notice or obtain knowledge thereof, of any information or fact that would materially alter or affect any opinion, certificate, letter and other document provided to the Manager pursuant to Section 6 herein.

(k) Upon commencement of the offering of the Shares under this Agreement (if requested by the Manager) (and upon the recommencement of the offering of the Shares under this Agreement following the termination of a suspension of sales hereunder), and each time that (i) the Registration Statement or the Prospectus shall be amended or supplemented (other than (A) an Interim Prospectus Supplement filed pursuant to Rule 424(b) pursuant to Section 4(s) of this Agreement, (B) a prospectus supplement relating solely to the offering or resale of securities other than the Shares or (C) the filing with the Commission of any report under the Exchange Act except such reports referred to in

Section 4(k)(ii), (ii) there is filed with the Commission any annual report on Form 10-K or quarterly report on Form 10-Q, or any other document that contains financial statements or financial information that is incorporated by reference into the Prospectus, or any amendment thereto, or (iii) the Shares are delivered to the Manager as principal at the Time of Delivery pursuant to a Terms Agreement (the date of such commencement (in the case that the above-mentioned request is made by the Manager), the date of each such recommencement and the date of each such event referred to in (i), (ii) and (iii) above, a “**Representation Date**”), the Company shall furnish or cause to be furnished to the Manager forthwith a certificate dated and delivered on such Representation Date, as the case may be, in form satisfactory to the Manager to the effect that the statements contained in the certificate referred to in Section 6(d) of this Agreement which were last furnished to the Manager are true and correct at the time of such Representation Date, as though made at and as of such time (except that such statements shall be deemed to relate to the Registration Statement and the Prospectus as amended and supplemented to such time) or, in lieu of such certificate, a certificate of the same tenor as the certificate referred to in said Section 6(d), modified as necessary to relate to the Registration Statement, the Disclosure Package and the Prospectus as amended and supplemented to the time of delivery of such certificate. In addition, upon notice from the Company to the Managers at any time prior to a Representation Date, the Company may notify the Managers that it intends to suspend sales pursuant to this Agreement and defer a Representation Date until further notice, provided, however that the Company shall at no time request a sale of the Shares pursuant to the terms of Section 3 herein until such time as the Company satisfies its obligations pursuant to Sections 4 and 6 hereof.

(l) At each Representation Date, the Company shall furnish or cause to be furnished forthwith to the Manager and to counsel to the Manager a written opinion of Latham & Watkins LLP, counsel to the Company (“**Company Counsel**”), dated and delivered on such Representation Date, in form and substance satisfactory to the Manager, of the same tenor as the opinion referred to in Section 6(b) of this Agreement, but modified as necessary to relate to the Registration Statement, the Disclosure Package and the Prospectus as amended and supplemented to the time of delivery of such opinion.

(m) At each Representation Date, the Company shall furnish or cause to be furnished forthwith to the Manager and to counsel to the Manager a written opinion of Morse, Barnes-Brown & Pendleton, P.C., special counsel to the Company with respect to intellectual property matters (“**Company IP Counsel**”), dated and delivered on such Representation Date, in form and substance satisfactory to the Manager, of the same tenor as the opinion referred to in Section 6(b) of this Agreement, but modified as necessary to relate to the Registration Statement, the Disclosure Package and the Prospectus as amended and supplemented to the time of delivery of such opinion.

(n) At each Representation Date, Ropes & Gray LLP, counsel to the Manager, shall deliver a written opinion, dated and delivered on such Representation Date, in form and substance satisfactory to the Manager, of the same tenor as the opinions referred to in Section 6(c) of this Agreement but modified as necessary to relate to the Registration Statement, the Disclosure Package and the Prospectus as amended and supplemented to the time of delivery of such opinion.

(o) At each Representation Date, the Company shall cause Ernst & Young LLP (the “**Accountants**”), or other independent accountants satisfactory to the Manager forthwith, to furnish the Manager a comfort letter, dated and delivered on such Representation Date, in form and substance satisfactory to the Manager of the same tenor as the comfort letter referred to in Section 6(e) of this Agreement but modified to relate to the Registration Statement, the Disclosure Package and the Prospectus, as amended and supplemented to the date of such letter.

(p) At each Representation Date, the Company shall cause to be furnished to the Manager a certificate of its chief financial officer, dated and delivered on such Representation Date, in form and substance satisfactory to the Manager of the same tenor as the certificate referred to in Section 6(f) of this Agreement but modified to relate to the Registration Statement, the Disclosure Package and the Prospectus, as amended and supplemented to the date of such letter.

(q) At each Representation Date, and at such other times as may reasonably be requested by the Manager (which shall be on a biweekly basis or otherwise), the Company will conduct a due diligence session, in form and substance satisfactory to the Manager, which shall include representatives of the management of the Company and the Accountants. The Company shall cooperate timely with any reasonable due diligence request from or review conducted by the Manager or its agents from time to time in connection with the transactions contemplated by this Agreement, including, without limitation, providing information and available documents and access to appropriate officers and agents of the Company during regular business hours and at the Company’s principal offices, and timely furnishing or causing to be furnished such certificates, letters and opinions from the Company, and its officers and agents, as the Manager may reasonably request.

(r) Nothing in this Agreement shall restrict the Manager from trading, and the Company acknowledges that the Manager may trade in the Common Stock for the Manager’s own account and for the account of its clients before, at the same time as, or after sales of the Shares occur pursuant to this Agreement or pursuant to a Terms Agreement.

(s) The Company will either (i) disclose in its Annual Reports on Form 10-K and Quarterly Reports on Form 10-Q, as applicable, with regard to the relevant quarter, the number of the Shares sold by or through the Manager pursuant to this Agreement, the Net Proceeds to the Company and the compensation paid by the Company with respect to such sales of the Shares pursuant to this Agreement, or (ii) on or prior to the earlier of (A) the date on which the Company shall file a Quarterly Report on Form 10-Q or an Annual Report on Form 10-K in respect of any fiscal quarter in which sales of Shares were made by the Manager pursuant to this Agreement and (B) the date on which the Company shall be obligated to file such document referred to in clause (A) in respect of such quarter (each such date, and any date on which an amendment to any such document is filed, a “**Filing Date**”), the Company will file a prospectus supplement with the Commission under the applicable paragraph of Rule 424(b), which prospectus supplement will set forth, with regard to such quarter, the number of the Shares

sold by or through the Manager pursuant to this Agreement, the Net Proceeds to the Company and the compensation paid by the Company with respect to such sales of the Shares pursuant to this Agreement and deliver such number of copies of each such prospectus supplement to Nasdaq as are required by such exchange.

(t) If, to the knowledge of the Company, the conditions set forth in Section 6(a) or 6(g) shall not be true and correct on the applicable Settlement Date or Time of Delivery, the Company will offer to any person who has agreed to purchase Shares from the Company as the result of an offer to purchase solicited by the Manager the right to refuse to purchase and pay for such Shares.

(u) Each acceptance by the Company of an offer to purchase the Shares hereunder, and each execution and delivery by the Company of a Terms Agreement, shall be deemed to be an affirmation to the Manager that the representations and warranties of the Company contained in or made pursuant to this Agreement are true and correct as of the date of such acceptance or of such Terms Agreement as though made at and as of such date, and an undertaking that such representations and warranties will be true and correct as of the Settlement Date for the Shares relating to such acceptance or as of the Time of Delivery relating to such sale, as the case may be, as though made at and as of such date (except that such representations and warranties shall be deemed to relate to the Registration Statement and the Prospectus as amended and supplemented relating to such Shares).

(v) The Company will use commercially reasonable efforts to cause the Shares to be listed for trading on Nasdaq and to maintain such listing.

(w) During any period when the delivery of a prospectus relating to the Shares is required (including in circumstances where such requirement may be satisfied pursuant to Rule 172 or any similar rule) to be delivered under the Act, the Company shall file, on a timely basis, with the Commission and Nasdaq all reports and documents required to be filed under the Exchange Act and the regulations thereunder.

(x) The Company shall cooperate with the Manager and use its reasonable efforts to permit the Shares to be eligible for clearance and settlement through the facilities of DTC.

(y) The Company will apply the Net Proceeds from the sale of the Shares in the manner set forth in the Disclosure Package and the Prospectus.

5. Payment of Expenses. The Company agrees to pay all costs, fees and expenses incurred in connection with the performance of its obligations under this Agreement, whether or not the transactions contemplated hereby are consummated, including without limitation (i) all expenses incident to the issuance and delivery of the Shares (including all printing and engraving costs), (ii) all necessary issue, transfer and other stamp taxes in connection with the issuance and sale of the Shares to the Manager, (iii) all fees and expenses of the Company's counsel, independent public or certified public accountants and other advisors to the Company, and the reasonable fees and expenses of the Manager's counsel, (iv) all costs and expenses incurred in connection with the preparation, printing, filing, shipping and distribution of the Registration

Statement (including financial statements, exhibits, schedules, consents and certificates of experts), each Issuer Free Writing Prospectus and the Prospectus, and all amendments and supplements thereto, and this Agreement, (v) filing fees, attorneys' fees and expenses incurred by the Company or the Manager in connection with qualifying or registering (or obtaining exemptions from the qualification or registration of) all or any part of the Shares for offer and sale under the state securities or blue sky laws, and, if requested by the Manager, preparing a "Blue Sky Survey" or memorandum, and any supplements thereto, advising the Manager of such qualifications, registrations and exemptions, (vi) the filing fees incident to the review and approval by FINRA of the terms of the sale of the Shares, if any, (vii) the fees and expenses associated with listing of the Shares on the Nasdaq, (viii) all fees and expenses of the registrar and transfer agent of the Common Stock, (ix) all fees and expenses (including reasonable fees and expenses of counsel) of the Company in connection with approval of the Shares by DTC for "book-entry" transfer, (x) all other fees, costs and expenses referred to in Item 14 of Part II of the Registration Statement and (xi) all other fees, costs and expenses incurred in connection with the performance of its obligations hereunder for which provision is not otherwise made in this Section 5. Notwithstanding the foregoing sentence, the fees and disbursements of Manager's counsel pursuant to subsections (v) and (vi) above shall not exceed (A) \$100,000 in connection with execution of this Agreement and (B) \$20,000 in connection with each Representation Date on which the Company is required to provide a certificate pursuant to Section 4(k) of this Agreement (and \$25,000 for any triggering event in connection with the filing of a Form 10-K). Except as provided in this Section 5 and in Section 7 hereof, the Manager shall pay its own expenses.

6. Conditions to the Obligations of the Manager. The obligations of the Manager under this Agreement and any Terms Agreement shall be subject to (i) the accuracy of the representations and warranties on the part of the Company contained herein as of the Execution Time, each Representation Date, and as of each Applicable Time, Settlement Date and Time of Delivery, (ii) to the performance by the Company of its obligations hereunder and (iii) the following additional conditions:

(a) The Prospectus, and any supplement thereto, required by Rule 424 to be filed with the Commission have been filed in the manner and within the time period required by Rule 424(b) with respect to any sale of Shares; each Interim Prospectus Supplement required to be filed shall have been filed in the manner required by Rule 424(b) within the time period required by Section 4(s) of this Agreement; any material required to be filed by the Company pursuant to Rule 433(d) under the Act, shall have been filed with the Commission within the applicable time periods prescribed for such filings by Rule 433; and no stop order suspending the effectiveness of the Registration Statement or any notice objecting to its use shall have been issued and no proceedings for that purpose or pursuant to Section 8A of the Act shall have been instituted or threatened.

(b) The Company shall have requested and caused each of Company Counsel and Company IP counsel to furnish to the Manager, on every date specified in Sections 4(l) and 4(m) of this Agreement, an opinion collectively covering the opinions in form and substance satisfactory to the Manager.

(c) The Manager shall have received from Ropes & Gray LLP, counsel for the Manager, on every date specified in Section 4(n) of this Agreement, such opinion or opinions, dated as of such date and addressed to the Manager, with respect to the issuance and sale of the Shares, the Registration Statement, the Disclosure Package, the Prospectus (together with any supplement thereto) and other related matters as the Manager may reasonably require, and the Company shall have furnished to such counsel such documents as they request for the purpose of enabling them to pass upon such matters.

(d) The Company shall have furnished or caused to be furnished to the Manager, on every date specified in Section 4(k) of this Agreement, a certificate of the Company, signed by the chief executive officer of the Company, and of the chief financial or chief accounting officer of the Company, dated as of such date, to the effect that the signers of such certificate have carefully examined the Registration Statement, the Disclosure Package and the Prospectus and any supplements or amendments thereto and this Agreement and that:

(i) the Company has received no stop order suspending the effectiveness of the Registration Statement, and no proceedings for such purpose or pursuant to Section 8A of the Act have been instituted or, to the Company's knowledge, threatened by the Commission;

(ii) since the date of the most recent financial statements included in the Prospectus and the Disclosure Package, there has been no Material Adverse Effect, except as set forth in or contemplated in the Disclosure Package and the Prospectus;

(iii) the representations, warranties and covenants set forth in Section 2 of this Agreement are true and correct with the same force and effect as though expressly made on and as of such date; and

(iv) the Company has complied with all the agreements hereunder and satisfied all the conditions on its part to be performed or satisfied hereunder at or prior to such date.

(e) The Company shall have requested and caused the Accountants to have furnished to the Manager, on every date specified in Section 4(o) hereof to the extent financial information audited or reviewed by such firms is included or incorporated by reference in the Registration Statement, the Disclosure Package and the Prospect, as amended and supplement to the date of such letter, and to the extent requested by the Manager in connection with any offering of the Shares, a letter (which may refer to letters previously delivered to the Manager), dated as of such date, in form and substance satisfactory to the Manager, which letter shall cover, without limitation, the various financial statements and disclosures contained in the Registration Statement, the Disclosure Package and the Prospectus and other matters ordinarily covered by accountants' "comfort letters" to underwriters in connection with registered public offerings as contemplated in the Statement on Auditing Standards No. 72, as well as confirming that they have performed a review of any unaudited interim financial information of the Company included in the Registration Statement, the Disclosure Package and the Prospectus in accordance with Statement on Auditing Standards No. 100.

References to the Prospectus in this paragraph (e) include any supplement thereto at the date of the letter.

(f) The Company shall have furnished or caused to be furnished to the Manager, on every date specified in Section 4(p) of this Agreement, a certificate of the chief financial officer of the Company, dated as of such date, in form and substance to the Manager and agreed upon prior to the date hereof, covering certain financial matters of the Company.

(g) Since the respective dates as of which information is disclosed in the Registration Statement, the Disclosure Package and the Prospectus, except as otherwise stated therein, there shall not have been (i) any change or decrease specified in the letter referred to in paragraph (e) of this Section 6 or (ii) Material Adverse Effect, except as set forth in or contemplated in the Disclosure Package (exclusive of any amendment or supplement thereto) the effect of which, in any case referred to in clause (i) or (ii) above, is, in the sole judgment of the Manager, so material and adverse as to make it impractical or inadvisable to proceed with the offering or delivery of the Shares as contemplated by the Registration Statement (exclusive of any amendment thereof), the Disclosure Package and the Prospectus (exclusive of any amendment or supplement thereto).

(h) FINRA shall not have raised any objection with respect to the fairness and reasonableness of the terms and arrangements under this Agreement.

(i) The Shares shall have been listed and admitted and authorized for trading on Nasdaq, and satisfactory evidence of such actions shall have been provided to the Manager.

(j) Prior to each Settlement Date and Time of Delivery, as applicable, the Company shall have furnished to the Manager such further information, certificates and documents as the Manager may reasonably request.

(k) Prior to the Execution Time, the Manager shall have received a certificate satisfying the beneficial ownership due diligence requirements of the Financial Crimes Enforcement Network (“**FinCEN**”) from the Company in form and substance reasonably satisfactory to the Manager, along with such additional supporting documentation as requested by the Manager in connection with the verification of the foregoing certificate.

If any of the conditions specified in this Section 6 shall not have been fulfilled when and as provided in this Agreement, or if any of the opinions and certificates mentioned above or elsewhere in this Agreement shall not be reasonably satisfactory in form and substance to the Manager and its counsel, this Agreement and all obligations of the Manager hereunder may be canceled at, or at any time prior to, any Settlement Date or Time of Delivery, as applicable, by the Manager. Notice of such cancellation shall be given to the Company in writing or by telephone or facsimile confirmed in writing.

The documents required to be delivered by this Section 6 shall be delivered at the office of Ropes & Gray LLP, counsel for the Manager, at 800 Boylston Street, Boston, Massachusetts 02199, Attention: Tara Fisher, on each such date as provided in this Agreement.

7. Indemnification and Contribution.

(a) The Company agrees to indemnify and hold harmless the Manager, its affiliates, as such term is defined in Rule 501(b) under the Act (each, an “**Affiliate**”), the directors, officers, employees and agents of the Manager, any broker-dealer affiliate of the Manager through which Shares are sold, and each person who controls the Manager within the meaning of either the Act or the Exchange Act and against any loss, claim, damage, liability or expense, as incurred, to which they or any of them may become subject under the Act, the Exchange Act or other federal or state statutory law or regulation, at common law or otherwise (including in settlement of any litigation, if such settlement is effected with the written consent of the Company or otherwise permitted by paragraph (d) below), insofar as such loss, claim, damage, liability or expense (or actions in respect thereof as contemplated below) arises out of or is based (i) upon any untrue statement or alleged untrue statement of a material fact contained in the Registration Statement (or any amendment thereto) or the omission or alleged omission therefrom of a material fact required to be stated therein or necessary to make the statements therein not misleading; or (ii) upon any untrue statement or alleged untrue statement of a material fact contained in any Issuer Free Writing Prospectus or any “issuer information” filed or required to be filed pursuant to Rule 433(d) under the Act, the Base Prospectus, the Prospectus Supplement or any Interim Prospectus Supplement (or any amendment or supplement thereto) or the omission or alleged omission therefrom of a material fact, in each case, necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading; or (iii) in whole or in part upon any inaccuracy in the representations and warranties of the Company contained herein; or (iv) in whole or in part upon any failure of the Company to perform its obligations hereunder or under law; and agrees to reimburse each such indemnified party, for any and all expenses (including the reasonable fees and disbursements of counsel chosen by the indemnified party) as such expenses are reasonably incurred by them in connection with investigating, defending, settling, compromising or paying any such loss, claim, damage, liability, expense or action; *provided, however*, that the foregoing indemnity agreement shall not apply to any loss, claim, damage, liability or expense to the extent, but only to the extent, arising out of or based upon any untrue statement or alleged untrue statement or omission or alleged omission made in reliance upon and in conformity with written information furnished to the Company by the Manager expressly for use in the Registration Statement (or any amendment thereto), any Issuer Free Writing Prospectus or the Prospectus (or any amendment or supplement thereto), it being understood and agreed that the only such information furnished by the Manager consists of the information described as such in subsection (b) below. This indemnity agreement will be in addition to any liabilities that the Company may otherwise have.

(b) The Manager agrees to indemnify and hold harmless the Company, the directors of the Company, each of the Company’s officers who signed the Registration Statement and each person, if any, who controls the Company within the meaning of the Act or the Exchange Act, against any loss, claim, damage, liability or expense, as incurred, to which the Company or any such director, officer or controlling person may become subject, under the Act, the Exchange Act, or other federal or state statutory law or regulation, or at common law or otherwise (including in settlement of any litigation, if such settlement is effected with the written consent of the Manager or otherwise permitted by paragraph (d) below), insofar as such loss, claim, damage, liability or expense (or actions in respect thereof as contemplated below) arises out of or is based (i) upon any untrue statement or alleged untrue statement of a material fact

contained in the Registration Statement (or any amendment thereto) or the omission or alleged omission therefrom of a material fact required to be stated therein or necessary to make the statements therein not misleading; or (ii) upon any untrue statement or alleged untrue statement of a material fact contained in any Issuer Free Writing Prospectus or any "issuer information" filed or required to be filed pursuant to Rule 433(d) under the Act, the Base Prospectus, the Prospectus Supplement or any Interim Prospectus Supplement (or any amendment or supplement thereto) or the omission or alleged omission therefrom of a material fact, in each case, necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading, in each case to the extent, but only to the extent, that such untrue statement or alleged untrue statement or omission or alleged omission was made in the Registration Statement, the Base Prospectus, any Issuer Free Writing Prospectus, any Prospectus Supplement or any Interim Prospectus Supplement (or any amendment or supplement thereto), in reliance upon and in conformity with written information furnished to the Company by the Manager expressly for use therein, it being understood and agreed upon that the only such information furnished by the Manager consists of the Manager's name as set forth on the cover page of the Prospectus Supplement; and to reimburse the Company, or any such director, officer or controlling person for any legal and other expense reasonably incurred by the Company, or any such director, officer or controlling person in connection with investigating, defending, settling, compromising or paying any such loss, claim, damage, liability, expense or action. The indemnity agreement set forth in this Section 7(b) shall be in addition to any liabilities that the Manager may otherwise have.

(c) Promptly after receipt by an indemnified party under this Section 7 of notice of the commencement of any action, such indemnified party will, if a claim in respect thereof is to be made against the indemnifying party under this Section 7, notify the indemnifying party in writing of the commencement thereof; but the omission to so to notify the indemnifying party will not relieve it from any liability which it may have to any indemnified party for contribution or otherwise than under the indemnity agreement contained in paragraph (a) or (b) above or to the extent it is not prejudiced (through the forfeiture of substantive rights or defenses) as a proximate result of such failure. In case any such action is brought against any indemnified party and such indemnified party seeks or intends to seek indemnity from an indemnifying party, the indemnifying party will be entitled to participate in, and, to the extent that it shall elect, jointly with all other indemnifying parties similarly notified, by written notice delivered to the indemnified party promptly after receiving the aforesaid notice from such indemnified party, to assume the defense thereof with counsel reasonably satisfactory to such indemnified party; *provided, however*, if the defendants in any such action include both the indemnified party and the indemnifying party and the indemnified party shall have reasonably concluded that a conflict may arise between the positions of the indemnifying party and the indemnified party in conducting the defense of any such action or that there may be legal defenses available to it and/or other indemnified parties which are different from or additional to those available to the indemnifying party, the indemnified party or parties shall have the right to select separate counsel to assume such legal defenses and to otherwise participate in the defense of such action on behalf of such indemnified party or parties. Upon receipt of notice from the indemnifying party to such indemnified party of such indemnifying party's election to assume the defense of such action and approval by the indemnified party of counsel, the indemnifying party will not be liable to such indemnified party under this Section 7 for any legal or other expenses subsequently incurred by such indemnified party in connection with the defense thereof

unless (i) the indemnified party shall have employed separate counsel in accordance with the proviso to the next preceding sentence (it being understood, however, that the indemnifying party shall not be liable for the expenses of more than one separate counsel (together with local counsel), approved by the indemnifying party (the Manager in the case of Section 7(b) and Section 7(e)), representing the indemnified parties who are parties to such action), (ii) the indemnifying party shall not have employed counsel reasonably satisfactory to the indemnified party to represent the indemnified party within a reasonable time after notice of commencement of the action, in each of which cases the fees and expenses of counsel shall be at the expense of the indemnifying party or (iii) the indemnifying party shall authorize the indemnified party to employ separate counsel at the expense of the indemnifying party.

(d) The indemnifying party under this Section 7 shall not be liable for any settlement of any proceeding effected without its written consent, but if settled with such consent or if there be a final judgment for the plaintiff, the indemnifying party agrees to indemnify the indemnified party against any loss, claim, damage, liability or expense by reason of such settlement or judgment. Notwithstanding the foregoing sentence, if at any time an indemnified party shall have requested an indemnifying party to reimburse the indemnified party for fees and expenses of counsel as contemplated by Section 7(c) hereof, the indemnifying party agrees that it shall be liable for any settlement of any proceeding effected without its written consent if (i) such settlement is entered into more than 60 days after receipt by such indemnifying party of the aforesaid request and (ii) such indemnifying party shall not have reimbursed the indemnified party in accordance with such request prior to the date of such settlement; *provided*, that if it is ultimately determined that an indemnified party was not entitled to indemnification hereunder, such indemnified party shall be responsible for repaying or reimbursing such amounts to the indemnifying party. No indemnifying party shall, without the prior written consent of the indemnified party, effect any settlement, compromise or consent to the entry of judgment in any pending or threatened action, suit or proceeding in respect of which any indemnified party is or could have been a party and indemnity was or could have been sought hereunder by such indemnified party, unless such settlement, compromise or consent (i) includes an unconditional release of such indemnified party from all liability on claims that are the subject matter of such action, suit or proceeding and (ii) does not include a statement as to or an admission of fault, culpability or a failure to act, by or on behalf of any indemnified party.

(e) If the indemnification provided for in this Section 7 is for any reason held to be unavailable to or otherwise insufficient to hold harmless an indemnified party in respect of any losses, claims, damages, liabilities or expenses referred to therein, then each indemnifying party shall contribute to the aggregate amount paid or payable by such indemnified party, as incurred, as a result of any losses, claims, damages, liabilities or expenses referred to therein (i) in such proportion as is appropriate to reflect the relative benefits received by the Company, on the one hand, and the Manager, on the other hand, from the offering of the Shares pursuant to this Agreement, or (ii) if the allocation provided by clause (i) above is not permitted by applicable law, in such proportion as is appropriate to reflect not only the relative benefits referred to in clause (i) above but also the relative fault of the Company on the one hand, and the Manager, on the other hand, in connection with the statements or omissions or inaccuracies in the representations and warranties herein which resulted in such losses, claims, damages, liabilities or expenses, as well as any other relevant equitable considerations. The relative benefits received by the Company shall be deemed to be equal to the total net proceeds from the

offering (before deducting expenses) received by them, and benefits received by the Manager shall be deemed to be equal to the total compensation received by the Manager under Section 3(c) of this Agreement, in each case as determined by this Agreement or any applicable Terms Agreement. The relative fault of the Company, on the one hand, and the Manager, on the other hand, shall be determined by reference to, among other things, whether any such untrue or alleged untrue statement of a material fact or omission or alleged omission to state a material fact or any such inaccurate or alleged inaccurate representation or warranty relates to information supplied by the Company, on the one hand, or the Manager, on the other hand, and the parties' relative intent, knowledge, access to information and opportunity to correct or prevent such statement or omission.

The amount paid or payable by a party as a result of the losses, claims, damages, liabilities and expenses referred to above shall be deemed to include, subject to the limitations set forth in Section 7(c), any legal or other fees or expenses reasonably incurred by such party in connection with investigating or defending any action or claim. The provisions set forth in Section 7(c) with respect to notice of commencement of any action shall apply if a claim for contribution is to be made under this Section 7(e); *provided, however*, that no additional notice shall be required with respect to any action for which notice has been given under Section 7(c) for purposes of indemnification.

The Company and the Manager agree that it would not be just and equitable if contribution pursuant to this Section 7(e) were determined by pro rata allocation or by any other method of allocation which does not take account of the equitable considerations referred to in this Section 7(e).

Notwithstanding the provisions of this Section 7(e), the Manager shall not be required to contribute any amount in excess of the discounts and commissions received by it in connection with the Shares sold by it pursuant to this Agreement and any applicable Terms Agreement in the specific transactions or transactions giving rise to the contribution obligation. No person guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Act) shall be entitled to contribution from any person who was not guilty of such fraudulent misrepresentation. For purposes of this Section 7(e), each Affiliate, director, officer, employee and agent of the Manager, each person, if any, who controls the Manager within the meaning of the Act and the Exchange Act and any broker-dealer affiliate of the Manager through which Shares are sold shall have the same rights to contribution as the Manager, and each director of the Company or each officer of the Company who signed the Registration Statement, and each person, if any, who controls the Company within the meaning of the Act and the Exchange Act shall have the same rights to contribution as the Company.

8. Termination.

(a) The Company shall have the right, by giving written notice as hereinafter specified, to terminate the provisions of this Agreement relating to the solicitation of offers to purchase the Shares in its sole discretion at any time. Any such termination shall be without liability of any party to any other party except that (i) if Shares have been sold through the Manager for the Company, then Section 4(u) shall remain in full force and effect, (ii) with respect to any pending sale, through the Manager for the Company, the obligations of the

Company, including in respect of compensation of the Manager, shall remain in full force and effect notwithstanding the termination and (iii) the provisions of Sections 2, 5, 7, 9, 10, 12 and 14 of this Agreement shall remain in full force and effect notwithstanding such termination.

(b) The Manager shall have the right, by giving written notice as hereinafter specified, to terminate the provisions of this Agreement relating to the solicitation of offers to purchase the Shares in its sole discretion at any time. Any such termination shall be without liability of any party to any other party except that the provisions of Sections 2, 5, 7, 9, 10, 12 and 14 of this Agreement shall remain in full force and effect notwithstanding such termination.

(c) This Agreement shall remain in full force and effect unless terminated pursuant to Sections 8(a) or (b) above or otherwise by mutual agreement of the parties; *provided* that any such termination by mutual agreement shall in all cases be deemed to provide that Sections 2, 5, 7 and 9 shall remain in full force and effect.

(d) Any termination of this Agreement shall be effective on the date specified in such notice of termination; *provided* that such termination shall not be effective until the close of business on the date of receipt of such notice by the Manager or the Company, as the case may be. If such termination shall occur prior to the Settlement Date or Time of Delivery for any sale of the Shares, such sale shall, subject to Section 6 hereof, settle in accordance with the provisions of Section 3(e) of this Agreement.

(e) In the case of any purchase of Shares by the Manager pursuant to a Terms Agreement, the obligations of the Manager pursuant to such Terms Agreement shall be subject to termination, in the absolute discretion of the Manager, by notice given to the Company prior to the Time of Delivery relating to such Shares, if at any time prior to such delivery and payment (i) trading or quotation in any of the Company's securities shall have been suspended or limited by the Commission or by Nasdaq, or trading in securities generally on either the Nasdaq or the New York Stock Exchange shall have been suspended or limited, or minimum or maximum prices shall have been generally established on any of such stock exchanges by the Commission or FINRA; (ii) a general banking moratorium shall have been declared by any of federal or New York authorities; (iii) there shall have occurred any outbreak or escalation of national or international hostilities or any crisis or calamity involving the United States, or any change in the United States or international financial markets, or any substantial change or development involving a prospective substantial change in United States' or international political, financial or economic conditions, as in the judgment of the Manager is material and adverse and makes it impracticable or inadvisable to proceed with the offering or delivery of the Shares in the manner and on the terms described in the Disclosure Package and the Prospectus or to enforce contracts for the sale of securities; (iv) in the judgment of the Manager there shall have occurred any Material Adverse Effect or (v) there shall have occurred a material disruption in commercial banking or securities settlement or clearance services in the United States.

9. Representations and Indemnities to Survive. The respective agreements, representations, warranties, indemnities and other statements of the Company, the officers of the Company and of the Manager set forth in or made pursuant to this Agreement will remain in full force and effect, regardless of any investigation made by the Manager or the Company or any of the officers, directors, employees, agents or controlling persons referred to in Section 7 hereof, and will survive delivery of and payment for the Shares.

10. Notices. All communications hereunder will be in writing and effective only on receipt, and:

If sent the Manager, will be mailed, delivered or telefaxed to:

Goldman Sachs & Co. LLC
200 West Street
New York, New York 10282
Facsimile: (212) 902-9316
Attention: Registration Department

with a copy to:

Ropes & Gray LLP
800 Boylston Street
Boston, Massachusetts 02199
Attention: Tara Fisher

If sent to the Company, will be mailed, delivered or telefaxed to:

bluebird bio, Inc.
455 Grand Union Boulevard
Somerville, Massachusetts 02145
Attention: Chief Executive Officer

with a copy to:

Latham & Watkins
200 Clarendon Street
Boston, Massachusetts 02116
Attention: Wesley Holmes, Esq.

Any party hereto may change the address for receipt of communications by giving written notice to the others.

11. Successors. This Agreement will inure to the benefit of and be binding upon the parties hereto and their respective successors and the officers, directors, employees, agents and controlling persons referred to in Section 7 hereof, and no other person will have any right or obligation hereunder.

12. No Fiduciary Duty. The Company hereby acknowledges that (a) the purchase and sale of the Shares pursuant to this Agreement is an arm's-length commercial transaction between the Company, on the one hand, and the Manager and any affiliate through which it may be acting, on the other, (b) the Manager is acting solely as sales agent and/or principal in connection with the purchase and sale of the Shares and not as a fiduciary of the Company and (c) the

Company's engagement of the Manager in connection with the offering and the process leading up to the offering is as an independent contractor and not in any other capacity. Furthermore, the Company agrees that it is solely responsible for making its own judgments in connection with the offering (irrespective of whether the Manager has advised or is currently advising it on related or other matters). The Company agrees that it will not claim that the Manager has rendered advisory services of any nature or respect, or owe an agency, fiduciary or similar duty to any of the Company, in connection with the transactions contemplated by this Agreement or the process leading thereto.

13. Integration. This Agreement and any Terms Agreement supersede all prior agreements and understandings (whether written or oral) between the Company and the Manager with respect to the subject matter hereof.

14. Applicable Law. This Agreement and any Terms Agreement will be governed by and construed in accordance with the laws of the State of New York applicable to contracts made and to be performed within the State of New York.

15. Waiver of Jury Trial. The Company 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, any Terms Agreement or the transactions contemplated hereby or thereby.

16. Counterparts. This Agreement and any Terms Agreement may be signed in one or more counterparts, each of which shall constitute an original and all of which together shall constitute one and the same agreement. Counterparts may be delivered via facsimile, electronic mail (including any electronic signature covered by the U.S. federal E-SIGN Act of 2000, Uniform Electronic Transactions Act, the Electronic Signatures and Records Act or other applicable law, e.g., www.docusign.com) or other transmission method and any counterpart so delivered shall be deemed to have been duly and validly delivered and be valid and effective for all purposes.

17. Amendment. This Agreement may be amended only with the written approval of both the Company and the Manager.

18. Recognition of the U.S. Special Resolution Regimes.

(a) In the event that the Manager is a Covered Entity and becomes subject to a proceeding under a U.S. Special Resolution Regime, the transfer from the Manager of this Agreement, and any interest and obligation in or under this Agreement, will be effective to the same extent as the transfer would be effective under the U.S. Special Resolution Regime if this Agreement, and any such interest and obligation, were governed by the laws of the United States or a state of the United States.

(b) In the event that the Manager is a Covered Entity or a BHC Act Affiliate of the Manager becomes subject to a proceeding under a U.S. Special Resolution Regime, Default Rights under this Agreement that may be exercised against the Manager are permitted to be exercised to no greater extent than such Default Rights could be exercised under the U.S. Special Resolution Regime if this Agreement were governed by the laws of the United States or a state of the United States.

(c) As used in this section:

“BHC Act Affiliate” has the meaning assigned to the term “affiliate” in, and shall be interpreted in accordance with, 12 U.S.C. § 1841(k).

“**Covered Entity**” means any of the following:

- (i) a “covered entity” as that term is defined in, and interpreted in accordance with, 12 C.F.R. § 252.82(b);
- (ii) a “covered bank” as that term is defined in, and interpreted in accordance with, 12 C.F.R. § 47.3(b); or
- (iii) a “covered FSI” as that term is defined in, and interpreted in accordance with, 12 C.F.R. § 382.2(b).

“**Default Right**” has the meaning assigned to that term in, and shall be interpreted in accordance with, 12 C.F.R. §§ 252.81, 47.2 or 382.1, as applicable.

“**U.S. Special Resolution Regime**” means each of (i) the Federal Deposit Insurance Act and the regulations promulgated thereunder and (ii) Title II of the Dodd-Frank Wall Street Reform and Consumer Protection Act and the regulations promulgated thereunder.

19. **Headings.** The section headings used in this Agreement and any Terms Agreement are for convenience only and shall not affect the construction hereof.

20. **Definitions.** The terms that follow, when used in this Agreement and any Terms Agreement, shall have the meanings indicated.

“**Act**” shall mean the Securities Act of 1933, as amended, and the rules and regulations of the Commission promulgated thereunder.

“**Applicable Time**” shall mean, with respect to any Shares, the time of sale of such Shares pursuant to this Agreement or any relevant Terms Agreement.

“**Base Prospectus**” shall mean the base prospectus referred to in Section 2(a) above contained in the Registration Statement at the Execution Time.

“**Business Day**” shall mean any day other than a Saturday, a Sunday or a legal holiday or a day on which banking institutions or trust companies are authorized or obligated by law to close in New York City.

“**Commission**” shall mean the Securities and Exchange Commission.

“**Disclosure Package**” shall mean (i) the Base Prospectus, (ii) the Prospectus Supplement, (iii) the most recently filed Interim Prospectus Supplement, if any, (iv) the Issuer Free Writing Prospectuses, if any, identified in Schedule I hereto, (v) the public offering price of Shares sold at the relevant Applicable Time as specified in a Terms Agreement and (vi) any other Free Writing Prospectus that the parties hereto shall hereafter expressly agree in writing to treat as part of the Disclosure Package.

“**Effective Date**” shall mean each date and time that the Registration Statement and any post-effective amendment or amendments thereto became or becomes effective.

“**Exchange Act**” shall mean the Securities Exchange Act of 1934, as amended, and the rules and regulations of the Commission promulgated thereunder.

“**Execution Time**” shall mean the date and time that this Agreement is executed and delivered by the parties hereto.

“**Free Writing Prospectus**” shall mean a free writing prospectus, as defined in Rule 405.

“**Interim Prospectus Supplement**” shall mean the prospectus supplement relating to the Shares prepared and filed pursuant to Rule 424(b) from time to time as provided by Section 4(s) of this Agreement.

“**Issuer Free Writing Prospectus**” shall mean an issuer free writing prospectus, as defined in Rule 433.

“**Prospectus**” shall mean the Base Prospectus, as supplemented by the Prospectus Supplement and the most recently filed Interim Prospectus Supplement (if any).

“**Prospectus Supplement**” shall mean the most recent prospectus supplement relating to the Shares that was first filed pursuant to Rule 424(b) at or prior to the Execution Time.

“**Registration Statement**” shall mean the registration statement referred to in Section 2(a) above, including exhibits and financial statements and any prospectus supplement relating to the Shares that is filed with the Commission pursuant to Rule 424(b) and deemed part of such registration statement pursuant to Rule 430B, as amended on each Effective Date and, in the event any post-effective amendment thereto becomes effective, shall also mean such registration statement as so amended.

“**Rule 158,**” “**Rule 163,**” “**Rule 164,**” “**Rule 172,**” “**Rule 405,**” “**Rule 415,**” “**Rule 424,**” “**Rule 430B**” and “**Rule 433**” refer to such rules under the Act.

[Signature Page Follows]

If the foregoing is in accordance with your understanding of our agreement, please sign and return to us the enclosed duplicate hereof, whereupon this letter and your acceptance shall represent a binding agreement among the Company and the Manager.

Very truly yours,

bluebird bio, Inc.

By: /s/ Jason F. Cole

Name: Jason F. Cole

Title: Chief Strategy and Financial Officer

SIGNATURE PAGE TO EQUITY DISTRIBUTION AGREEMENT

CONFIRMED AND ACCEPTED,
as of the date first written above:

Goldman Sachs & Co. LLC

By: /s/ Dan Cocks
Name: Dan Cocks
Title: Managing Director

SIGNATURE PAGE TO EQUITY DISTRIBUTION AGREEMENT

SCHEDULE I

Schedule of Free Writing Prospectuses included in the Disclosure Package

None

Schedule I

bluebird bio, Inc.

Common Stock, par value \$0.01 per share

TERMS AGREEMENT

, 20

Goldman Sachs & Co. LLC
200 West Street
New York, New York 10282

Ladies and Gentlemen:

bluebird bio, Inc., a Delaware corporation (the "Company") proposes, subject to the terms and conditions stated herein and in the Equity Distribution Agreement, dated June 22, 2022 (the "Equity Distribution Agreement"), between the Company and Goldman Sachs & Co. LLC to issue and sell to Goldman Sachs & Co. LLC the securities specified in the Schedule I hereto (the "Purchased Shares").

Each of the provisions of the Equity Distribution Agreement not specifically related to the solicitation by the Manager of offers to purchase securities is incorporated herein by reference in its entirety, and shall be deemed to be part of this Terms Agreement to the same extent as if such provisions had been set forth in full herein. Each of the representations and warranties set forth therein shall be deemed to have been made at and as of the date of this Terms Agreement and the Time of Delivery, except that each representation and warranty in Section 2 of the Equity Distribution Agreement which makes reference to the Prospectus (as therein defined) shall be deemed to be a representation and warranty as of the date of the Equity Distribution Agreement in relation to the Prospectus, and also a representation and warranty as of the date of this Terms Agreement and the Time of Delivery in relation to the Prospectus as amended and supplemented to relate to the Purchased Shares.

An amendment to the Registration Statement (as defined in the Equity Distribution Agreement), or a supplement to the Prospectus, as the case may be, relating to the Purchased Shares, in the form heretofore delivered to the Manager is now proposed to be filed with the Securities and Exchange Commission.

Subject to the terms and conditions set forth herein and in the Equity Distribution Agreement which are incorporated herein by reference, the Company agrees to issue and sell to the Manager and the latter agrees to purchase from the Company the number of shares of the Purchased Shares at the time and place and at the purchase price set forth in the Schedule I hereto.

Exhibit A-1

If the foregoing is in accordance with your understanding, please sign and return to us a counterpart hereof, whereupon this Terms Agreement, including those provisions of the Equity Distribution Agreement incorporated herein by reference, shall constitute a binding agreement between the Manager and the Company.

bluebird bio, Inc.

By: _____
Name: _____
Title: _____

ACCEPTED as of the date first written above.

Goldman Sachs & Co. LLC

By: _____
Name: _____
Title: _____

Exhibit A-1

Title of Purchased Shares:

Common Stock, par value \$0.01 per share

Number of Shares of Purchased Shares:

Purchase Price by Goldman Sachs & Co. LLC:

Method of and Specified Funds for Payment of Purchase Price:

By wire transfer to a bank account specified by the Company in same day funds.

Method of Delivery:

Free delivery of the Shares to the Manager's account at The Depository Trust Company in return for payment of the purchase price.

Time of Delivery:

Closing Location:

Documents to be Delivered:

The following documents referred to in the Equity Distribution Agreement shall be delivered as a condition to the closing at the Time of Delivery:

- (1) The opinion referred to in Section 4(l).
- (2) The opinion referred to in Section 4(m).
- (3) The opinion referred to in Section 4(n).
- (4) The accountants' letter referred to in Section 4(o).
- (5) The chief financial officer's certificate referred to in Section 4(p).
- (5) The officers' certificate referred to in Section 4(k).
- (6) Such other documents as the Manager shall reasonably request.

Exhibit A-1

bluebird bio, Inc.

Common Stock, par value \$0.01 per share

Sales Notice

From: bluebird bio, Inc.
To: Goldman Sachs & Co. LLC
Date: [●], 20[●]
Subject: Equity Distribution Agreement – Sales Notice

Ladies and Gentlemen:

Pursuant to the terms and subject to the conditions contained in the Equity Distribution Agreement between bluebird bio, Inc. (the “**Company**”), and Goldman Sachs & Co. LLC (the “**Manager**”) dated June 22, 2022 (the “**Agreement**”), the Company hereby requests that the Manager sell up to [●] shares (the “**Shares**”) of the Company’s common stock, par value \$0.01 per share, at a minimum market price of \$[●] per Share. Sales should begin on the date of this Sales Notice and shall continue until [●] / [all Shares are sold].

Exhibit A-2

200 Clarendon Street
 Boston, Massachusetts 02116
 Tel: +1.617.948.6000 Fax: +1.617.948.6001
 www.lw.com

LATHAM & WATKINS LLP

FIRM / AFFILIATE OFFICES

Austin	Moscow
Beijing	Munich
Boston	New York
Brussels	Orange County
Century City	Paris
Chicago	Riyadh
Dubai	San Diego
Düsseldorf	San Francisco
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June 22, 2022

bluebird bio, Inc.
 60 Binney Street
 Cambridge, MA 02142

Re: Registration Statement on Form S-3 (Registration No. 333-236489); Shares of Common Stock, \$0.01 par value per share, having an aggregate offering price of up to \$75.0 million

To the addressee set forth above:

We have acted as special counsel to bluebird bio, Inc., a Delaware corporation (the “*Company*”), in connection with the sale through Goldman Sachs & Co. LLC, as manager (the “*Manager*”), from time to time by the Company of shares of common stock, \$0.01 par value per share, having an aggregate offering price of up to \$75.0 million (the “*Shares*”) pursuant to (i) a registration statement on Form S-3 under the Securities Act of 1933, as amended (the “*Act*”), filed with the Securities and Exchange Commission (the “*Commission*”) on February 18, 2020 (Registration No. 333-236489) (the “*Registration Statement*”), (ii) a base prospectus dated February 18, 2020 (the “*Base Prospectus*”), (iii) a related prospectus supplement filed with the Commission on the date hereof pursuant to Rule 424(b) under the Act (together with the Base Prospectus, the “*Prospectus*”), and (iv) that certain Equity Distribution Agreement, dated as of June 22, 2022, by and between the Company and the Manager (the “*Equity Distribution Agreement*”). This opinion is being furnished in connection with the requirements of Item 601(b)(5) of Regulation S-K under the Act, and no opinion is expressed herein as to any matter pertaining to the contents of the Registration Statement or related Prospectus, other than as expressly stated herein with respect to the issue of the Shares.

As such counsel, we have examined such matters of fact and questions of law as we have considered appropriate for purposes of this letter. With your consent, we have relied upon certificates and other assurances of officers of the Company and others as to factual matters without having independently verified such factual matters. We are opining herein as to the General Corporation Law of the State of Delaware (the “*DGCL*”), and we express no opinion with respect to any other laws.

LATHAM & WATKINS LLP

Subject to the foregoing and the other matters set forth herein, it is our opinion that, upon the completion of all Corporate Proceedings (as defined below) relating to the Shares, when the Shares shall have been duly registered on the books of the transfer agent and registrar therefor in the name or on behalf of the purchasers, upon issuance, delivery and payment therefor in an amount not less than the par value thereof in accordance with the Corporate Proceedings and the terms of the Equity Distribution Agreement, the Shares to be issued and sold by the Company pursuant to the Equity Distribution Agreement will be duly authorized by all necessary corporate action of the Company and such Shares will be validly issued, fully paid and nonassessable. In rendering the foregoing opinion, we have assumed that (i) the Company will comply with all applicable notice requirements regarding uncertificated shares provided in the DGCL, (ii) upon the issuance of any of the Shares, the total number of shares of Common Stock issued and outstanding will not exceed the total number of shares of Common Stock that the Company is then authorized to issue under its certificate of incorporation, and (iii) certain terms of the Shares to be issued by the Company from time to time will be authorized and approved by the board of directors of the Company or one or more committees thereof established by the board of directors of the Company with the authority to issue and sell Shares pursuant to the Equity Distribution Agreement in accordance with the DGCL, the Company's certificate of incorporation, the by-laws of the Company and certain resolutions of the board of directors of the Company and one or more committees thereof (with such approvals referred to herein as the "*Corporate Proceedings*") prior to issuance thereof.

This opinion is for your benefit in connection with the Registration Statement and may be relied upon by you and by persons entitled to rely upon it pursuant to the applicable provisions of the Act. We consent to your filing this opinion as an exhibit to the Company's Form 8-K dated June 22, 2022 and to the reference to our firm contained in the Registration Statement and in the Prospectus under the heading "Legal Matters." In giving such consent, we do not thereby admit that we are in the category of persons whose consent is required under Section 7 of the Act or the rules and regulations of the Commission thereunder.

Sincerely,

/s/ Latham & Watkins LLP