

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, DC 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): March 31, 2023

ANNOVIS BIO, INC.
(Exact Name of Registrant as Specified in Charter)

**Delaware
(State or Other Jurisdiction
of Incorporation)**

**001-39202
(Commission
File Number)**

**26-2540421
(I.R.S. Employer
Identification No.)**

**1055 Westlakes Drive, Suite 300
Berwyn, PA 19312
(Address of Principal Executive Offices, and Zip Code)**

**(610) 727-3913
Registrant's Telephone Number, Including Area Code**

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

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, par value \$0.0001 per share	ANVS	New York Stock Exchange

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 Instruction A.2. below):

- Written communication 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 communication pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- Pre-commencement communication pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (17 CFR §230.405) or Rule 12b-2 of the Securities Exchange Act of 1934 (17 CFR §240.12b-2).

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 March 31, 2023, Annovis Bio, Inc. (the “Company”), entered into an ATM Equity Offering Sales AgreementSM (the “Sales Agreement”) with BofA Securities, Inc. (“BofA”) and ThinkEquity LLC (“ThinkEquity” and, together with BofA, the “Sales Agents”), as sales agents, pursuant to which the Company may offer and sell, from time to time through the Sales Agents, shares of the Company’s common stock, par value \$0.0001 per share (the “Common Stock”), having an aggregate offering price of up to \$50.0 million (the “Shares”).

The offer and sale of the Shares will be made pursuant to a shelf registration statement on Form S-3 and the related prospectus (File No. 333-252625) filed by the Company with the Securities and Exchange Commission (the “SEC”) on February 1, 2021 and declared effective by the SEC on February 11, 2021, as supplemented by a prospectus supplement dated March 31, 2023 and filed with the SEC pursuant to Rule 424(b) under the Securities Act of 1933, as amended (the “Securities Act”).

Pursuant to the Sales Agreement, the Sales Agents may sell the Shares by any method permitted by law deemed to be an “at the market offering” as defined in Rule 415 of the Securities Act, including sales made by means of ordinary brokers’ transactions, including on the New York Stock Exchange, at market prices or as otherwise agreed with the Sales Agents. The Sales Agents will use commercially reasonable efforts consistent with its normal trading and sales practices to sell the Shares from time to time, based upon instructions from the Company, including any price or size limits or other customary parameters or conditions the Company may impose.

The Company is not obligated to make any sales of the Shares under the Sales Agreement. The offering of Shares pursuant to the Sales Agreement will terminate upon the termination of the Sales Agreement by the Sales Agents or the Company, as permitted therein.

The Company will pay the Sales Agents a commission rate of up to 2.0% of the aggregate gross proceeds from each sale of Shares and has agreed to provide the Sales Agents with customary indemnification and contribution rights. The Company will also reimburse the Sales Agents for certain specified expenses in connection with entering into the Sales Agreement. The Sales Agreement contains customary representations and warranties and conditions to the placements of the Shares pursuant thereto.

The foregoing description of the Sales Agreement is not complete and is qualified in its entirety by reference to the full text of such agreement, a copy of which is filed herewith as Exhibit 1.1 to this Current Report on Form 8-K and is incorporated herein by reference. The opinion of the Company’s counsel regarding the validity of the Shares that will be issued pursuant to the Sales Agreement is also filed herewith as Exhibit 5.1.

This Current Report on Form 8-K shall not constitute an offer to sell or the solicitation of an offer to buy the Common Stock discussed herein, nor shall there be any offer, solicitation, or sale of common stock 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.

Exhibit Number	Description
1.1	At-the-Market Equity Offering Sales Agreement, dated March 31, 2023, by and among Annovis Bio, Inc., BofA Securities, Inc. and ThinkEquity LLC.
5.1	Opinion of Duane Morris LLP regarding the legality of shares.
23.1	Consent of Duane Morris 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.

ANNOVIS BIO, INC.

Date: April 3, 2023

By: /s/ Henry Hagopian, III
Name: Henry Hagopian, III
Title: Chief Financial Officer

ANNOVIS BIO, INC.Common Stock
(\$0.0001 par value)**ATM EQUITY OFFERINGSM SALES AGREEMENT**

March 31, 2023

BofA Securities, Inc.
ThinkEquity LLCc/o BofA Securities, Inc.
One Bryant Park
New York, New York 10036c/o ThinkEquity LLC
17 State Street, 41st Floor
New York, New York 10004

Ladies and Gentlemen:

Annovis Bio, Inc., a Delaware corporation (the “Company”), proposes, subject to the terms and conditions stated herein, to issue and sell from time to time to or through BofA Securities, Inc. (“BofA”) or ThinkEquity LLC (“ThinkEquity”), as sales agents and/or principals (each an “Agent”, and collectively, the “Agents”), shares (the “Shares”) of the Company’s common stock, \$0.0001 par value (the “Common Stock”), having an aggregate gross sales price of not to exceed \$50,000,000, on the terms set forth in this ATM Equity OfferingSM Sales Agreement. The Company agrees that whenever it determines to sell Shares directly to an Agent or Agents as principal(s) it will enter into a separate written Terms Agreement (each, a “Terms Agreement”), in substantially the form of Annex I hereto, relating to such sale in accordance with Section 2(j) hereof. References herein to “this Agreement” or to matters contained “herein” or “hereunder”, or words of similar import, mean this ATM Equity OfferingSM Sales Agreement and any applicable Terms Agreement.

The Company has prepared and filed with the Securities and Exchange Commission (the “Commission”) a shelf registration statement on Form S-3 (File No. 252625), covering the public offering and sale of certain securities of the Company, including the Shares, under the Securities Act of 1933, as amended (the “1933 Act”) and the rules and regulations promulgated thereunder (the “1933 Act Regulations”), which shelf registration statement was declared effective by the Commission on February 11, 2021. The “Registration Statement”, as of any time, means such registration statement as amended by any post-effective amendments thereto at such time, including the exhibits and any schedules thereto at such time, the documents incorporated or deemed to be incorporated by reference therein at such time pursuant to Item 12 of Form S-3 under the 1933 Act and the documents otherwise deemed to be a part thereof as of such time pursuant to Rule 430B of the 1933 Act Regulations (“Rule 430B”); provided, however, that the “Registration Statement” without reference to a time means such registration statement as amended by any post-effective amendments thereto as of the time of the first contract of sale for the Shares, which time shall be considered the “new effective date” of the Registration Statement with respect to the Shares within the meaning of paragraph (f)(2) of Rule 430B (“Rule 430B(f)(2)”), including the exhibits and schedules thereto at such time, the documents incorporated or deemed to be incorporated by reference therein at such time pursuant to Item 12 of Form S-3 under the 1933 Act and the documents otherwise deemed to be a part thereof as of such time pursuant to Rule 430B. The base prospectus filed as part of such shelf registration statement, as amended in the form in which it has been filed most recently with the Commission in accordance with Section 3(b) or 3(c) hereof, including the documents incorporated or deemed to be incorporated by reference therein pursuant to Item 12 of Form S-3 under the 1933 Act, is referred to herein as the “Base Prospectus”. Promptly after execution and delivery of this Agreement, the Company will prepare and file a prospectus supplement relating to the Shares in accordance with the provisions of Rule 424(b) of the 1933 Act Regulations (“Rule 424(b)”). Such final prospectus supplement, as amended by the prospectus supplement filed most recently with the Commission in accordance with Section 3(b), 3(c) or 3(n) hereof, as the case may be, including the documents incorporated or deemed to be

incorporated by reference therein pursuant to Item 12 of Form S-3 under the 1933 Act, is referred to herein as the “Prospectus Supplement”. The Base Prospectus, as amended by the Prospectus Supplement and any applicable pricing supplement thereto, in the forms of the Base Prospectus, the Prospectus Supplement and any such pricing supplement are first furnished to the Agents for use in connection with the offering and sale of Shares, are collectively referred to herein as the “Prospectus.” For purposes of this Agreement, all references to the Registration Statement, any preliminary prospectus or the Prospectus or any amendment or supplement thereto shall be deemed to be the copy filed with the Commission pursuant to its Electronic Data Gathering, Analysis and Retrieval system (or any successor system)(“EDGAR”).

As used in this Agreement:

“Applicable Time” means, with respect to any offer and sale of Shares, the time immediately prior to the first contract of sale for such Shares, or such other time as agreed by the Company and the applicable Agents.

“General Disclosure Package” means each Issuer General Use Free Writing Prospectus, if any, issued prior to the Applicable Time, the most recent Prospectus filed with the Commission in accordance with Section 3(b), 3(c) or 3(n) hereof that is distributed to investors prior to the Applicable Time and the number of Shares and the initial offering price per Share, all considered together.

“Issuer Free Writing Prospectus” means any “issuer free writing prospectus,” as defined in Rule 433 of the 1933 Act Regulations (“Rule 433”), including, without limitation, any “free writing prospectus” (as defined in Rule 405 under the 1933 Act (“Rule 405”)) relating to the Shares that is (i) required to be filed with the Commission by the Company, (ii) a “road show that is a written communication” within the meaning of Rule 433(d)(8)(i), whether or not required to be filed with the Commission, or (iii) exempt from filing with the Commission pursuant to Rule 433(d)(5)(i) because it contains a description of the Shares or of the offering thereof that does not reflect the final terms, in each case in the form filed or required to be filed with the Commission or, if not required to be filed, in the form retained in the Company’s records pursuant to Rule 433(g).

“Issuer General Use Free Writing Prospectus” means any Issuer Free Writing Prospectus approved by the Agents or, in the case of a specific offer and sale of Shares, the applicable Agents pursuant to Section 3(l) hereof that is furnished to the Agents or such Agents, as the case may be, for general distribution to investors, as evidenced by communications between the Company and the Agents or such Agents, as the case may be.

“Issuer Limited Use Free Writing Prospectus” means any Issuer Free Writing Prospectus that is not an Issuer General Use Free Writing Prospectus.

All references in this Agreement to financial statements and schedules and other information which is “contained,” “included,” “made,” “stated” or “referred to” (or other references of like import) in the Registration Statement, any preliminary prospectus or the Prospectus shall be deemed to include all such financial statements and schedules and other information incorporated or deemed to be incorporated by reference in the Registration Statement, any preliminary prospectus or the Prospectus, as the case may be, prior to the Applicable Time relating to the particular Shares; and all references in this Agreement to amendments or supplements to the Registration Statement, any preliminary prospectus or the Prospectus shall be deemed to include the filing of any document under the Securities Exchange Act of 1934, as amended (the “1934 Act”), and the rules and regulations promulgated thereunder (the “1934 Act Regulations”) incorporated or deemed to be incorporated by reference in the Registration Statement, such preliminary prospectus or the Prospectus, as the case may be, at or after the Applicable Time relating to the particular Shares.

Section 1. Representations and Warranties. The Company represents and warrants to the Agents at the date of this Agreement, each Registration Statement Amendment Date (as defined in Section 3(o) hereof), each Company Periodic Report Date (as defined in Section 3(n) hereof), each Company Earnings Report Date (as defined in Section 3(o) hereof), each Request Date (as defined in Section 3(o) hereof), each Applicable Time and each Settlement Date (as defined in Section 2(g) hereof) (collectively, a “Representation Date”), and agrees with the Agents, as follows:

(i) Compliance of the Registration Statement, the Prospectus and Incorporated Documents. The Company meets the requirements for use of Form S-3 under the 1933 Act. The Registration Statement is a shelf registration statement and the Shares have been and remain eligible for registration by the Company on such shelf registration statement. Each of the Registration Statement and any post-effective amendment thereto has become effective under the 1933 Act. No stop order suspending the effectiveness of the Registration Statement or any post-effective amendment thereto has been issued under the 1933 Act, no notice of objection of the Commission to the use of the Registration Statement or any post-effective amendment thereto pursuant to Rule 401(g)(1) of the 1933 Act Regulations (“Rule 401(g)(1)”) has been received by the Company, no order preventing or suspending the use of any preliminary prospectus or the Prospectus or any amendment or supplement thereto has been issued and no proceedings for any of those purposes have been instituted or are pending or, to the Company’s knowledge, contemplated. The Company has complied with each request (if any) from the Commission for additional information.

Each of the Registration Statement and any post-effective amendment thereto, at the time of its effectiveness and as of each deemed effective date with respect to the Agents pursuant to Rule 430B(f)(2), complied in all material respects with the requirements of the 1933 Act and the 1933 Act Regulations. Each of any preliminary prospectus and the Prospectus and any amendment or supplement thereto, at the time it was filed with the Commission, complied in all material respects with the requirements of the 1933 Act and the 1933 Act Regulations and is identical to the electronically transmitted copy thereof filed with the Commission pursuant to EDGAR, except to the extent permitted by Regulation S-T.

The documents incorporated or deemed to be incorporated by reference in the Registration Statement, any preliminary prospectus and the Prospectus, when they became effective or 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 1934 Act and the 1934 Act Regulations.

(ii) Accurate Disclosure. Neither the Registration Statement nor any amendment thereto, at its effective time or at any Settlement Date, contained, contains or will contain an untrue statement of a material fact or omitted, omits or will omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading. At each Applicable Time, neither (A) the General Disclosure Package nor (B) any individual Issuer Limited Use Free Writing Prospectus, when considered together with the General Disclosure Package, included, includes or will include an untrue statement of a material fact or omitted, omits or will 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. Neither the Prospectus nor any amendment or supplement thereto (including any prospectus wrapper), as of its issue date, at the time of any filing with the Commission pursuant to Rule 424(b) or at any Settlement Date, included, includes or will include an untrue statement of a material fact or omitted, omits or will 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. The documents incorporated or deemed to be incorporated by reference in the Registration Statement, the General Disclosure Package and the Prospectus, at the time the Registration Statement became effective or when such documents incorporated by reference were or hereafter are filed with the Commission, as the case may be, when read together with the other information in the Registration Statement, the General Disclosure Package or the Prospectus, as the case may be, did not, do not and will not include an untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading.

(iii) Issuer Free Writing Prospectuses. No Issuer Free Writing Prospectus conflicts or will conflict with the information contained in the Registration Statement, any preliminary prospectus or the Prospectus or any amendment or supplement thereto, including any document incorporated by reference therein, that has not been superseded or modified. Any offer that is a written communication relating to the Shares made prior to the initial filing of the Registration Statement by the Company or any person acting on its behalf (within the meaning, for this paragraph only, of Rule 163(c) of the 1933 Act Regulations) has been filed with the Commission in accordance with the exemption provided by Rule 163 of the 1933 Act Regulations (“Rule 163”) and otherwise complied with the requirements of Rule 163, including, without limitation, the legending requirement, to qualify such offer for the exemption from Section 5(c) of the 1933 Act provided by Rule 163.

(iv) Company Not Ineligible Issuer. (A) At the time of filing the Registration Statement and any post-effective amendment thereto, (B) at the earliest time thereafter that the Company or another offering participant made a *bona fide* offer (within the meaning of Rule 164(h)(2) of the 1933 Act Regulations) of the Shares, (C) at the date of this Agreement and any Terms Agreement and (D) at each Applicable Time, the Company was not and is not an “ineligible issuer,” as defined in Rule 405, without taking account of any determination by the Commission pursuant to Rule 405 that it is not necessary that the Company be considered an ineligible issuer.

(v) Independent Accountants. WithumSmith+Brown, PC, who has certified the financial statements and supporting schedules included in the Registration Statement, the General Disclosure Package and the Prospectus are independent public accountants as required by the 1933 Act, the 1933 Act Regulations, the 1934 Act, the 1934 Act Regulations and the Public Company Accounting Oversight Board.

(vi) Financial Statements; Non-GAAP Financial Measures. The financial statements of the Company included in the Registration Statement, the General Disclosure Package and the Prospectus, together with the related schedules and notes, present fairly, in all material respects, the financial position of the Company at the dates indicated and the statements of operations, statements of cash flows, statements of redeemable convertible preferred stock and stockholders’ equity (deficit) of the Company for the periods specified; said financial statements have been prepared in conformity with U.S. generally accepted accounting principles (“GAAP”) applied on a consistent basis throughout the periods involved. The financial statements of the businesses or properties acquired or proposed to be acquired, if any, included in the Registration Statement, the General Disclosure Package and the Prospectus present fairly in all material respects the information set forth therein, have been prepared in conformity with GAAP applied on a consistent basis and otherwise have been prepared in accordance with, in the case of businesses acquired or to be acquired, the applicable financial statement requirements of Rule 3-05 or, in the case of real estate operations acquired or to be acquired, Rule 3-14 of Regulation S-X. The supporting schedules, if any, present fairly in all material respects in accordance with GAAP the information required to be stated therein. The selected financial data and the summary financial information included in the Registration Statement, the General Disclosure Package and the Prospectus present fairly in all material respects the information shown therein and have been compiled on a basis consistent with that of the audited financial statements included therein. Any pro forma financial statements and the related notes thereto included in the Registration Statement, the General Disclosure Package and the Prospectus present fairly the information shown therein, have been prepared in accordance with the Commission’s rules and guidelines with respect to pro forma financial statements and have been properly compiled on the bases described therein, and the assumptions used in the preparation thereof are reasonable and the adjustments used therein are appropriate to give effect to the transactions and circumstances referred to therein. Except as included in the Registration Statement, the General Disclosure Package and the Prospectus, no historical or pro forma financial statements or supporting schedules are required to be included in the Registration Statement, any preliminary prospectus or the Prospectus under the 1933 Act or the 1933 Act Regulations. All disclosures contained in the Registration Statement, the General Disclosure Package or the Prospectus, if any, regarding “non-GAAP financial measures” (as such term is defined by the rules and regulations of the Commission) comply with Regulation G under the 1934 Act and Item 10 of Regulation S-K under the 1933 Act, to the extent applicable. The interactive data in eXtensible Business Reporting Language incorporated by reference in the Registration Statement, the General Disclosure Package and the Prospectus fairly presents in all material respects the required information and has been prepared in accordance with the Commission’s rules and guidelines applicable thereto.

(vii) No Material Adverse Change. Except as stated in the Registration Statement, the General Disclosure Package and the Prospectus, since the respective dates as of which information is given in the Registration Statement, the General Disclosure Package or the Prospectus, (A) there has been no material adverse change in the condition, financial or otherwise, or in the earnings, business affairs or business prospects of the Company, whether or not arising in the ordinary course of business (a “Material Adverse Change”), (B) there have been no transactions entered into by the Company, other than those in the ordinary course of business, which are material with respect to the Company, and (C) there has been no

dividend or distribution of any kind declared, paid or made by the Company on any class or series of its capital stock.

(viii) Good Standing of the Company. The Company has been duly organized and is validly existing as a corporation in good standing under the laws of the State of Delaware and has all requisite power and authority to own, lease and operate its properties and to conduct its business as described in the Registration Statement, the General Disclosure Package and the Prospectus and to enter into and perform its obligations under, and to consummate the transactions contemplated in, this Agreement. The Company is duly qualified as a foreign corporation to transact business and is in good standing in each jurisdiction in which such qualification is required, whether by reason of the ownership or leasing of property or the conduct of business, except where the failure so to qualify or to be in good standing would not, singly or in the aggregate, result in a material adverse effect in (A) the condition, financial or otherwise, or in the earnings, business affairs or business prospects of the Company, whether or not arising in the ordinary course of business, or (B) the ability of the Company to enter into and perform any of its obligations under, or to consummate any of the transactions contemplated in, this Agreement (collectively, a “Material Adverse Effect”).

(ix) No Subsidiaries. The Company has no subsidiaries.

(x) Capitalization; Listing of Common Stock. The authorized, issued and outstanding shares of capital stock of the Company are as set forth in the Registration Statement and the Prospectus (except for subsequent issuances, if any, pursuant to this Agreement, pursuant to reservations, agreements or employee benefit plans referred to in the Registration Statement, the General Disclosure Package and the Prospectus or pursuant to the exercise of convertible securities or options referred to in the Registration Statement, the General Disclosure Package and the Prospectus). The outstanding shares of capital stock of the Company have been duly authorized and validly issued and are fully paid and non-assessable. None of the outstanding shares of capital stock of the Company were issued in violation of the preemptive or other similar rights of any securityholder of the Company or any other person or entity. The Company’s Common Stock has been registered pursuant to Section 12(b) of the 1934 Act, and the Shares have been approved for listing, subject to official notice of issuance, on the New York Stock Exchange (the “NYSE”), and the Company has taken no action designed to, or likely to have the effect of, terminating the registration of the Common Stock under the 1934 Act or the listing of the Common Stock (including the Shares) on the NYSE, nor has the Company received any notification that the Commission or the NYSE is contemplating terminating such registration or listing.

(xi) Authorization of this Agreement. This Agreement has been duly authorized, executed and delivered by the Company.

(xii) Authorization and Description of Shares. The Shares have been duly authorized for issuance and sale by the Company pursuant to this Agreement and, when issued and delivered by the Company pursuant to this Agreement against payment of the consideration set forth in this Agreement, will be validly issued and fully paid and non-assessable. The issuance of the Shares is not subject to the preemptive or other similar rights of any securityholder of the Company or any other person or entity. The Common Stock conforms in all material respects to all statements relating thereto contained in the Registration Statement, the General Disclosure Package and the Prospectus and such statements conform in all material respects to the rights set forth in the instruments defining the same. No holder of Shares will be subject to personal liability solely by reason of being such a holder.

(xiii) Registration Rights. There are no persons with registration rights or other similar rights to have any securities registered for sale pursuant to the Registration Statement or otherwise registered for sale or sold by the Company under the 1933 Act pursuant to this Agreement, other than those rights that have been disclosed in the Registration Statement, the General Disclosure Package and the Prospectus and have been waived.

(xiv) Absence of Violations, Defaults and Conflicts. The Company is not (A) in violation of its charter, by-laws or similar organizational document, (B) in default in the performance or observance of

any obligation, agreement, covenant or condition contained in any contract, indenture, mortgage, deed of trust, loan or credit agreement, note, lease or other agreement or instrument to which the Company is a party or by which it may be bound or to which any of the properties, assets or operations of the Company is subject (collectively, “Agreements and Instruments”), except for such defaults that would not, singly or in the aggregate, result in a Material Adverse Effect, or (C) in violation of any law, statute, rule, regulation, judgment, order, writ or decree of any arbitrator, court, governmental body, regulatory body, administrative agency (including, without limitation, the U.S. Food and Drug Administration (the “FDA”) or the U.S. Centers for Medicare and Medicaid Services) or other authority, body or agency having jurisdiction over the Company or any of its properties, assets or operations (each, a “Governmental Entity”), except for such violations that would not, singly or in the aggregate, result in a Material Adverse Effect. The execution, delivery and performance of this Agreement and the consummation of the transactions contemplated herein and in the Registration Statement, the General Disclosure Package and the Prospectus (including the issuance and sale of Shares and the use of the proceeds from the sale thereof as described therein under the caption “Use of Proceeds”) and compliance by the Company with its obligations hereunder have been duly authorized by all requisite action and do not and will not, whether with or without the giving of notice or passage of time or both, conflict with or constitute a breach of, or default or Repayment Event (as defined below) under, or result in the creation or imposition of any lien, charge or encumbrance upon any properties, assets or operations of the Company pursuant to, the Agreements and Instruments (except for such conflicts, breaches, defaults or Repayment Events or liens, charges or encumbrances that would not, singly or in the aggregate, result in a Material Adverse Effect), nor will such action result in any violation of the provisions of the charter, by-laws or similar organizational document of the Company or any law, statute, rule, regulation, judgment, order, writ or decree of any Governmental Entity. As used herein, a “Repayment Event” means any event or condition which gives the holder of any note, debenture or other financing instrument (or any person acting on such holder’s behalf) the right to require the repurchase, redemption or repayment of all or a portion of the related financing by the Company.

(xv) Absence of Labor Dispute. No labor dispute with the employees of the Company exists or, to the knowledge of the Company, is imminent, and the Company is not aware of any existing or imminent labor disturbance by the employees of any of its principal suppliers, manufacturers, customers or contractors, which could, singly or in the aggregate, result in a Material Adverse Effect.

(xvi) Absence of Proceedings. Except as stated in the Registration Statement, the General Disclosure Package and the Prospectus, there is no action, suit, proceeding, inquiry or investigation before or brought by any Governmental Entity now pending, or, to the knowledge of the Company, threatened, against or affecting the Company which could, singly or in the aggregate, result in a Material Adverse Effect. The aggregate of all pending legal or governmental proceedings to which the Company is a party or of which any of its properties, assets or operations are the subject which are not described in the Registration Statement, the General Disclosure Package and the Prospectus, including ordinary routine litigation incidental to the business, would not, singly or in the aggregate, result in a Material Adverse Effect.

(xvii) Accuracy of Exhibits. There are no contracts or documents which are required to be described in the Registration Statement, any preliminary prospectus or the Prospectus or to be filed as exhibits to the Registration Statement which have not been so described and filed as required.

(xviii) Absence of Further Requirements. No filing with, or authorization, approval, consent, license, order, registration, qualification or decree of, any Governmental Entity is necessary or required for the Company’s due authorization, execution and delivery of, or performance of its obligations under, this Agreement or for the offering, issuance, sale or delivery of Shares or the consummation of the transactions contemplated in this Agreement, except such as have been already obtained or as may be required under the 1933 Act, the 1933 Act Regulations, the rules of the NYSE, the securities laws of any state or non-U.S. jurisdiction or the rules of Financial Industry Regulatory Authority, Inc. (“FINRA”).

(xix) Possession of Licenses and Permits. The Company possesses such permits, licenses, approvals, consents and other authorizations issued by the appropriate Governmental Entities necessary to conduct the business now operated by it (collectively, “Governmental Licenses”) (including, without

limitation, all such Governmental Licenses required by any Governmental Entity engaged in the regulation of clinical registries, clinical trials or activities related to the business now operated by the Company in such jurisdictions), except where the failure so to possess would not, singly or in the aggregate, result in a Material Adverse Effect. The Company is in compliance with the terms and conditions of all Governmental Licenses, except where the failure so to comply would not, singly or in the aggregate, result in a Material Adverse Effect. All of the Governmental Licenses are valid and in full force and effect, except where the invalidity of such Governmental Licenses or the failure of such Governmental Licenses to be in full force and effect would not, singly or in the aggregate, result in a Material Adverse Effect. The Company has not received any notice of proceedings relating to the revocation or modification of any Governmental Licenses which, if the subject of an unfavorable decision, ruling or finding, could, singly or in the aggregate, result in a Material Adverse Effect.

(xx) Title to Property. The Company does not own any real property. All of the leases and subleases material to the business of the Company, and under which the Company holds properties described in the Registration Statement, the General Disclosure Package or the Prospectus, are in full force and effect, and the Company has not received any notice of any material claim of any sort that has been asserted by anyone adverse to its rights under any of the leases or subleases mentioned above or affecting or questioning its rights to the continued possession of the leased or subleased premises under any such lease or sublease.

(xxi) Possession of Intellectual Property. The Company owns or possesses, has a valid license to, or can acquire on reasonable terms, all patents, patent applications, statutory invention rights, community designs, invention disclosures, rights in utility models and industrial designs, licenses, inventions, copyrights (including copyrights in software), intellectual property rights in technology and software, data and know how (including, without limitation, trade secrets and other unpatented and/or unpatentable proprietary or confidential information, systems or procedures), trademarks, service marks, trade names, business names, logos, slogans, trade dress, design rights, Internet domain names, any other designations of source or origin and other intellectual property or proprietary rights (including all registrations and applications for registration and renewals of, and all goodwill associated with, the foregoing) (collectively, "Intellectual Property") necessary to carry on the business now operated by it and as proposed to be operated as described in the Registration Statement, the General Disclosure Package and the Prospectus. (a) The Company has not engaged in, nor received any notice or is otherwise aware of, any infringement, misappropriation or other violation of or conflict with respect to any Intellectual Property of any third party, (b) there is no pending or threatened action, suit, proceeding or claim regarding the subject matter of the foregoing clause (a), and (c) the Company is unaware of any facts or circumstances which would form a reasonable basis for any such claim. All Intellectual Property owned by or exclusively licensed to the Company (such Intellectual Property, the "Company Intellectual Property") is valid, subsisting and enforceable, and free of material defects, including with respect to the filing and prosecution thereof. There is no pending or threatened action, suit, proceeding or claim by any third party challenging the validity, ownership, registrability, enforceability or scope of any Company Intellectual Property and the Company is unaware of any facts or circumstances which would form a reasonable basis for any such claim or render any Company Intellectual Property invalid or inadequate to protect the interest of the Company therein, and which infringement or conflict, if the subject of an unfavorable decision, ruling or finding, invalidity or inadequacy could, singly or in the aggregate, result in a Material Adverse Effect. No third party is, to the Company's knowledge, infringing, misappropriating or otherwise violating any of the Company Intellectual Property and there is no pending or threatened action, suit, proceeding or claim by the Company against a third party regarding the foregoing. (x) The Company has complied in all material respects with the terms of each agreement pursuant to which Intellectual Property has been licensed to the Company, (y) the Company has not received any written notice alleging any noncompliance therewith and is unaware of any facts or circumstances which would form a reasonable basis for any such claim and (z) all such agreements are in full force and effect. Each Person who is or was an employee or contractor of the Company and who is, was or is expected to be involved in the creation or development of any Intellectual Property for or on behalf of the Company has executed a valid written agreement containing an enforceable assignment to the Company all of such Person's rights in and to such Intellectual Property and, to the Company's knowledge, no employee of the Company is in or has ever been in violation of any term of any agreement with or covenant to a former employer where the basis of such violation relates to such

employee's employment with the Company or actions undertaken by the employee while employed with the Company. The Company has taken all reasonable steps necessary to maintain and protect the confidentiality of the material trade secrets and other material confidential Intellectual Property used in connection with the business of the Company, and the confidentiality of such material trade secrets and material confidential Intellectual Property has not been compromised or disclosed to or accessed by any third party, except in each case pursuant to appropriate nondisclosure and confidentiality agreements. No university, military, educational institution, research center, Governmental Entity or other organization has funded, sponsored or contributed to research and development conducted in connection with the business of the Company that (i) has any claim of right to, ownership of or other lien on any Company Intellectual Property or (ii) would affect the proprietary nature of any Company Intellectual Property or restrict the ability of the Company to enforce, license or exclude others from using any Company Intellectual Property.

(xxii) Environmental Laws. Except as described in the Registration Statement, the General Disclosure Package and the Prospectus or would not, singly or in the aggregate, result in a Material Adverse Effect, (A) the Company is not in violation of any federal, state, local or foreign statute, law, rule, regulation, ordinance, code, policy or rule of common law or any judicial or administrative interpretation thereof, including any judicial or administrative order, consent, decree or judgment, relating to pollution or protection of human health, the environment (including, without limitation, ambient air, surface water, groundwater, land surface or subsurface strata) or wildlife, including, without limitation, laws and regulations relating to the release or threatened release of chemicals, pollutants, contaminants, wastes, toxic substances, hazardous substances, petroleum or petroleum products, asbestos-containing materials or mold (collectively, "Hazardous Materials") or to the manufacture, processing, distribution, use, treatment, storage, disposal, transport or handling of Hazardous Materials (collectively, "Environmental Laws"), (B) the Company has all permits, authorizations and approvals required under any applicable Environmental Laws and is in compliance with their requirements, (C) there are no pending or, to the knowledge of the Company, threatened administrative, regulatory or judicial actions, suits, demands, demand letters, claims, liens, notices of noncompliance or violation, investigation or proceedings relating to any Environmental Law against the Company and (D) to the knowledge of the Company, there are no events or circumstances that would reasonably be expected to form the basis of an order for clean-up or remediation, or an action, suit or proceeding by any private party or Governmental Entity, against or affecting the Company relating to Hazardous Materials or any Environmental Laws.

(xxiii) Accounting Controls and Disclosure Controls. The Company maintains effective internal control over financial reporting (as defined under Rule 13-a15 and Rule 15d-15 of the 1934 Act Regulations) and a system of internal accounting controls sufficient to provide reasonable assurances that: (A) transactions are executed in accordance with management's general or specific authorization; (B) transactions are recorded as necessary to permit preparation of financial statements in conformity with GAAP and to maintain accountability for assets; (C) access to assets is permitted only in accordance with management's general or specific authorization; (D) 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 (E) the interactive data in eXtensible Business Reporting Language incorporated by reference in the Registration Statement, the General Disclosure Package and the Prospectus fairly presents in all material respects the required information and is prepared in accordance with the Commission's rules and guidelines applicable thereto. Except as described in the Registration Statement, the General Disclosure Package and the Prospectus, since the end of the Company's most recent audited fiscal year, there has been (1) no material weakness in the Company's internal control over financial reporting (whether or not remediated) and (2) no change in the Company's internal control over financial reporting that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting. The Company maintains an effective system of disclosure controls and procedures (as defined in Rule 13a-15 and Rule 15d-15 of the 1934 Act Regulations) that are designed to ensure that the information required to be disclosed by the Company in the reports that it files or submits under the 1934 Act is recorded, processed, summarized and reported, within the time periods specified in the Commission's rules and forms, and is accumulated and communicated to the Company's management, including its principal executive officer or officers and principal financial officer or officers, as appropriate, to allow timely decisions regarding disclosure.

(xxiv) Compliance with the Sarbanes-Oxley Act. There is and has been no failure on the part of the Company or any of the Company's directors or officers, in their capacities as such, to comply in all material respects with any provision of the Sarbanes-Oxley Act of 2002 and the rules and regulations promulgated in connection therewith, including, without limitation, Section 402 related to loans and Sections 302 and 906 related to certifications.

(xxv) Payment of Taxes. All United States federal income tax returns of the Company required by law to be filed have been filed and all taxes shown by such returns or otherwise assessed, which are due and payable, have been paid, except assessments against which appeals have been or will be promptly taken and as to which adequate reserves have been provided. The United States federal income tax returns of the Company through the fiscal year ended December 31, 2021 have been settled and no assessment in connection therewith has been made against the Company. The Company has filed all other tax returns that are required to have been filed by it pursuant to applicable foreign, state, local or other law except insofar as the failure to file such returns would not, singly or in the aggregate, result in a Material Adverse Effect, and has paid all taxes due pursuant to such returns or pursuant to any assessment received by the Company, except for such taxes, if any, as are being contested in good faith and as to which adequate reserves have been established by the Company. The charges, accruals and reserves on the books of the Company in respect of any income and corporation tax liability for any years not finally determined are adequate to meet any assessments or re-assessments for additional income tax for any years not finally determined, except to the extent of any inadequacy that would not, singly or in the aggregate, result in a Material Adverse Effect.

(xxvi) Insurance. The Company carries or is entitled to the benefits of insurance, with financially sound and reputable insurers, in such amounts and covering such risks as is generally maintained by companies of established repute engaged in the same or similar business, and all such insurance is in full force and effect. The Company has no reason to believe that it will not be able (A) to renew its existing insurance coverage as and when such policies expire or (B) to obtain comparable coverage from similar institutions as may be necessary or appropriate to conduct its business as now conducted and at a cost that would not, singly or in the aggregate, result in a Material Adverse Effect. The Company has not been denied any insurance coverage which it has sought or for which it has applied.

(xxvii) Investment Company Act. The Company is not required, and upon the issuance and sale of the Shares as contemplated herein and the application of the net proceeds therefrom as described in the Registration Statement, the General Disclosure Package and the Prospectus will not be required, to register as an "investment company" under the Investment Company Act of 1940, as amended (the "1940 Act").

(xxviii) Absence of Manipulation. Neither the Company nor any affiliate of the Company has taken, nor will the Company or any such affiliate take, directly or indirectly, any action which is designed, or would be expected, to cause or result in, or which constitutes, the stabilization or manipulation of the price of any security of the Company to facilitate the sale or resale of any Shares or to result in a violation of Regulation M under the 1934 Act.

(xxix) Foreign Corrupt Practices Act. The Company is not and, to the knowledge of the Company, no director, officer, agent, employee, affiliate or other person acting on behalf of the Company is aware of or has taken any action, directly or indirectly, that would result in a violation by such persons of either (A) the Foreign Corrupt Practices Act of 1977, as amended, and the rules and regulations thereunder (the "FCPA"), including, without limitation, making use of the mails or any means or instrumentality of interstate commerce corruptly in furtherance of an offer, payment, promise to pay or authorization of the payment of any money, or other property, gift, promise to give, or authorization of the giving of anything of value to any "foreign official" (as such term is defined in the FCPA) or any foreign political party or official thereof or any candidate for foreign political office, in contravention of the FCPA or (B) the U.K. Bribery Act 2010 (the "Bribery Act"), and the Company and, to the knowledge of the Company, its other affiliates have conducted their businesses in compliance with the FCPA and the Bribery Act and have instituted and maintain policies and procedures designed to ensure, and which are reasonably expected to continue to ensure, continued compliance therewith.

(xxx) Money Laundering Laws. The operations of the Company is and has 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 Entity (collectively, the “Money Laundering Laws”). No action, suit or proceeding by or before any Governmental Entity involving the Company with respect to the Money Laundering Laws is pending or, to the best knowledge of the Company, threatened.

(xxxii) OFAC. The Company is not and, to the knowledge of the Company, no director, officer, agent, employee, affiliate or other person acting on behalf of the Company is (A) an individual or entity (“Person”) currently the subject or target of any sanctions administered or enforced by the United States Government, including, without limitation, the U.S. Department of the Treasury’s Office of Foreign Assets Control, the United Nations Security Council, the European Union, Her Majesty’s Treasury, or other relevant sanctions authority (collectively, “Sanctions”), or (B) located, organized or resident in a country or territory that is the subject of Sanctions. The Company will not, directly or indirectly, use the proceeds of the sale of the Shares, or lend, contribute or otherwise make available such proceeds to any of its joint venture partners or other Persons, to fund any activities of or business with any Person, or in any country or territory, that, at the time of such funding, is the subject of Sanctions or 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.

(xxxiii) Lending Relationship. Except as disclosed in the Registration Statement, the General Disclosure Package and the Prospectus, the Company (A) does not have any material lending or other relationship with the Agents or any bank, lending or other affiliate of an Agent and (B) does not intend to use any of the proceeds from the sale of the Shares to repay any outstanding debt owed to an Agent or any affiliate of an Agent.

(xxxiv) Statistical and Market-Related Data. Any statistical and market-related data included in the Registration Statement, the General Disclosure Package or the Prospectus are based on or derived from sources that the Company believes, after reasonable inquiry, to be reliable and accurate and, to the extent required, the Company has obtained the written consent to the use of such data from such sources.

(xxxv) No Commissions. The Company is not a party to any contract, agreement or understanding with any person (other than as contemplated by this Agreement) that would give rise to a valid claim against the Company or the Agents for a brokerage commission, finder’s fee or like payment in connection with the offering and sale of any Shares.

(xxxvi) Not an Actively-Traded Security. The Common Stock is not an “actively-traded security” exempted from the requirements of Rule 101 of Regulation M under the 1934 Act by subsection (c)(1) of such rule.

(xxxvii) Cybersecurity and Data Protection. (A) To the knowledge of the Company, there has been no security breach or incident, unauthorized access or disclosure, or other compromise of or relating to the Company information technology and computer systems, networks, hardware, software, data and databases (including the data and information of its patients, customers, employees, suppliers, vendors and any third party data maintained, processed or stored by the Company, and any such data processed or stored by third parties on behalf of the Company), equipment or technology (collectively, “IT Systems and Data”); (B) the Company has not been notified of, and has no knowledge of any event or condition that could result in, any security breach or incident, unauthorized access or disclosure of or other compromise to its IT Systems and Data; and (C) the Company has implemented appropriate controls, policies, procedures, and technological safeguards to maintain and protect the integrity, continuous operation, redundancy, disaster recovery and security of its IT Systems and Data reasonably consistent with industry standards and practices, or as required by applicable data protection laws, healthcare laws and regulatory standards. The IT Systems and Data are adequate and operational for, in accordance with their documentation and functional specifications, the business of the Company as now operated by it and as currently proposed to be operated as described in the Registration Statement, the General Disclosure Package and the Prospectus.

The Company is in compliance in all material respects with all applicable laws or statutes and all judgments, orders, rules and regulations of any court or arbitrator or governmental or regulatory authority, internal policies and contractual obligations relating to the privacy and security of the IT Systems and Data, including the collection, use, transfer, processing, disposal, disclosure, handling, storage and analysis of personally identifiable information, protected health information, consumer information and other confidential information of the Company and any third parties in their possession (“Sensitive Company Data”), and the protection of such IT Systems and Data and Sensitive Company Data from unauthorized use, access, misappropriation or modification. The Company has taken reasonable steps necessary to maintain the confidentiality of the Sensitive Company Data. The Company has not received any written notice, claim, complaint, demand or letter from any Person or Governmental Entity in respect of its business under applicable data security and data protection laws and regulations and industry standards regarding misuse, loss, unauthorized destruction or unauthorized disclosure of any Sensitive Company Data. To the knowledge of the Company, there has been no unauthorized or illegal use of or access to any Sensitive Company Data by any third party. The Company has not been required to notify any individual, Governmental Entity or data protection authority of any information security breach, compromise or incident involving Sensitive Company Data and are not the subject of any inquiry or investigation by any Governmental Entity or data protection authority regarding any of the foregoing.

(xxxvii) ERISA Compliance. The Company and any “Employee Benefit Plan” (within the meaning of Section 3(3) of the Employee Retirement Income Security Act of 1974, as amended, and the regulations and published interpretations thereunder (collectively, “ERISA”)) for which the Company or its “ERISA Affiliates” (as defined below) would have any liability (each, a “Plan”) are in compliance with ERISA and each Plan has been established and 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 Internal Revenue Code of 1986, as amended, and the regulations and published interpretations thereunder (the “Code”). No “reportable event” (as defined under ERISA) has occurred or is reasonably expected to occur with respect to any Plan. No Plan, if such Plan were terminated, would have any “amount of unfunded benefit liabilities” (as defined under ERISA). Neither the Company nor any of its ERISA Affiliates has incurred or reasonably expects to incur any obligation or liability under (i) Title IV of ERISA with respect to termination of, or withdrawal from, any Plan, (ii) Sections 412 and 430, 4971, 4975 or 4980B of the Code or (iii) Sections 302 and 303, 406, 4063 and 4064 of ERISA. Each Plan that is intended to be qualified under Section 401(a) of the Code is so qualified and nothing has occurred, whether by action or failure to act, which would cause the loss of such qualification. 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 could reasonably be expected to result in liability to the Company. The Company does not have any “accumulated postretirement benefit obligations” (within the meaning of Statement of Financial Accounting Standards 106). “ERISA Affiliate” means, with respect to the Company, any member of any group of organizations described in Sections 414(b), (c), (m) or (o) of the Code of which the Company is a member.

(xxxviii) Regulatory Matters. (i) The Company has not received any FDA Form 483, written notice of adverse filing, warning letter, untitled letter or other correspondence or notice from the FDA or other relevant regulatory authorities, or any other court or arbitrator or federal, state, local or foreign governmental or regulatory authority, alleging or asserting material noncompliance with the Federal Food, Drug and Cosmetic Act (21 U.S.C. § 301 et seq.), as amended, and the regulations promulgated thereunder (the “FFDCA”), the Anti-Kickback Statute (42 U.S.C. Section 1320a-7b(b)), the Civil Monetary Penalties Law (42 U.S.C. § 1320a-7a), the Physician Payment Sunshine Act (42 U.S.C. § 1320a-7h), the Civil False Claims Act (31 U.S.C. Section 3729 et seq.), the criminal False Claims Law (42 U.S.C. § 1320a-7b(a)), all criminal laws relating to health care fraud and abuse, including but not limited to 18 U.S.C. Sections 286 and 287, and the health care fraud criminal provisions under the U.S. Health Insurance Portability and Accountability Act of 1996 (“HIPAA”) (42 U.S.C. Section 1320d et seq.), the exclusion laws (42 U.S.C. § 1320a-7), HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act (42 U.S.C. Section 17921 et seq.), Medicare (Title XVIII of the Social Security Act), Medicaid (Title XIX of the Social Security Act), and any and all other similar state, local, federal or foreign health care laws and the regulations promulgated pursuant to such laws, including all laws and regulations applicable

to ownership, testing, development, manufacture, packaging, processing, use, distribution, storage, import, export or disposal of the Company's product candidates, each as amended from time to time (collectively, "Health Care Laws"); (ii) the Company is and has been in compliance in all material respects with applicable Health Care Laws; (iii) the Company has not engaged in activities which are, as applicable, cause for false claims liability, civil penalties or mandatory or permissive exclusion from Medicare, Medicaid, or any other state health care program or federal health care program; (iv) the Company has not received written notice of any claim, action, suit, proceeding, hearing, enforcement, investigation, arbitration or other action from any court or arbitrator or U.S. or non-U.S. federal, national, state, local or other governmental or regulatory authority, governmental or regulatory agency or body, court, arbitrator or self-regulatory organization (each, a "Governmental Authority") or third party alleging that any product operation or activity is in violation of any Health Care Laws and, to the Company's knowledge, no such claim, action, suit, proceeding, hearing, enforcement, investigation, arbitration or other action is threatened; (v) the Company has filed, obtained, maintained or submitted all reports, documents, forms, notices, applications, records, claims, submissions and supplements or amendments as required by applicable Health Care Laws, and that all such reports, documents, forms, notices, applications, records, claims, submissions and supplements or amendments were complete, correct and not misleading on the date filed (or were corrected or supplemented by a subsequent submission); (vi) neither the Company nor its directors, officers, employees or, to the best of its knowledge, agents are or have been debarred, suspended or excluded, or has been convicted of any crime or engaged in any conduct that would result in a debarment, suspension or exclusion from any federal or state government health care program, human research study, clinical trial, or clinical registry, or to the knowledge of the Company, is subject to a governmental inquiry, investigation, proceeding, or other similar action that could reasonably be expected to result in debarment, suspension, or exclusion; and (vii) the Company is not a party to and the Company does not have any ongoing reporting obligations pursuant to, any court order, injunction, ruling, or consent or party to any judgment, decree or settlement, including, without limitation, any corporate integrity agreements, deferred prosecution agreements, certification of compliance agreement, monitoring agreements, consent decrees, settlement orders, plans of correction or similar agreements with or civil monetary penalties imposed by an Governmental Authority, in each case under or in any way relating to Health Care Laws.

(xxxix) Preclinical Studies and Clinical Trials. The preclinical studies and clinical trials conducted by, on behalf of or sponsored by the Company, or in which the Company has participated, that are described in the Registration Statement, the General Disclosure Package or the Prospectus, or the results of which are referred to in the Registration Statement, the General Disclosure Package or the Prospectus, as applicable, were, and if still pending, are being conducted in all respects in accordance with the experimental protocols established for each study or trial, as well as any conditions of approval and policies imposed by any institutional review board, ethics review board or committee responsible for the oversight of such studies and trials, all accepted professional and scientific standards, and all applicable local, state and federal laws, rules and regulations of the FDA and comparable drug regulatory agencies outside of the United States to which they are subject (such institutional review boards, ethics review boards, committees, the FDA or any comparable regulatory agencies, collectively, the "Regulatory Authorities") and all other applicable Health Care Laws; the descriptions in the Registration Statement, the General Disclosure Package or the Prospectus of the results of such studies and trials do not contain any misstatement of a material fact or omit to state a material fact necessary to make such statements not misleading, and fairly present the data derived from such studies or trials; the Company has no knowledge of any other studies or trials not described in the Registration Statement, the General Disclosure Package and the Prospectus, the results of which are inconsistent with or reasonably call into question the results described or referred to in the Registration Statement, the General Disclosure Package and the Prospectus when viewed in the context in which such results are described and the current state of development; the Company has not received any written notice, correspondence or other communications from the Regulatory Authorities requiring or threatening (i) the termination or suspension or clinical hold of any research studies, clinical trials or clinical registries conducted by or on behalf of, or sponsored by, the Company or in which the Company has participated, or (ii) the material modification of any studies or trials that would cause them to differ from their descriptions in the Registration Statement, the General Disclosure Package and the Prospectus, other than ordinary course communications with respect to modifications in connection with the design and implementation of such studies or trials, and, to the

Company's knowledge, there are no reasonable grounds for the same. There has not been any violation of applicable law or regulation by the Company in its product development, submissions or reports to any regulatory authority that could be expected to require investigation, corrective action or enforcement action.

(xl) Health Care Products Manufacturing. The manufacture of the Company's product candidates by or on behalf of the Company is being conducted in compliance in all material respects with all applicable Health Care Laws, including, without limitation, the FDA's current good manufacturing practice regulations at 21 CFR Part 820, and, to the extent applicable, the respective counterparts thereof promulgated by governmental authorities in countries outside the United States. The Company has not had any manufacturing site (whether Company-owned, or that of a third party manufacturer for the Company's product candidates) subject to a Governmental Authority (including FDA) shutdown or import or export prohibition, nor received any FDA or other Governmental Authority "warning letters," or "untitled letters" alleging or asserting material noncompliance with any applicable Health Care Laws, requests to make material changes to the Company's product candidates, processes or operations, or similar correspondence or notice from the FDA or other Governmental Authority alleging or asserting material noncompliance with any applicable Health Care Laws, other than those that have been satisfactorily addressed and/or closed with the FDA or other Governmental Authority. To the knowledge of the Company, neither the FDA nor any other Governmental Authority is considering such action.

(xli) No Safety Notices. (i) There have been no recalls, field notifications, field corrections, market withdrawals or replacements, warnings, "dear doctor" letters, investigator notices, safety alerts or other notices of action relating to an alleged lack of safety, efficacy, or regulatory compliance of the Company's product candidates ("Safety Notices") and (ii) there are no facts that would be reasonably likely to result in (x) a Safety Notice with respect to the Company's product candidates, (y) a change in labeling of any of the Company's product candidates, or (z) a termination or suspension of marketing or testing of any of the Company's product candidates.

Any certificate signed by any officer or other authorized signatory of the Company and delivered to the Agents or to counsel for the Agents shall be deemed a representation and warranty by the Company to the Agents as to the matters covered thereby.

Section 2. Sale and Delivery of Shares.

(a) Subject to the terms and conditions set forth herein, the Company agrees to issue and sell Shares through the applicable Agents acting as sales agent or directly to the applicable Agents acting as principal from time to time. Sales of the Shares, if any, through an Agent acting as sales agent or directly to an Agent acting as principal will be made by means of transactions that are deemed to be "at-the-market" offerings as defined in Rule 415 under the 1933 Act, including block trades, ordinary brokers' transactions on the NYSE or otherwise at market prices prevailing at the time of sale, at prices related to prevailing market prices or at negotiated prices.

(b) The Shares are to be sold to an Agent on an agent basis on any day (other than a day on which the NYSE is scheduled to close prior to its regular weekday closing time) (each, a "Trading Day") on which (i) the Company has instructed such Agent to make such sales and (ii) the Company has satisfied its covenants and conditions specified in Sections 4 and 5 hereof. On any Trading Day, the Company may sell Shares through only one Agent and, if it determines to do so, shall instruct the applicable Agent by telephone (confirmed promptly by telecopy or email, which confirmation will be promptly acknowledged by such Agent) as to the maximum number of Shares to be sold on such Trading Day and the minimum price per Share at which such Shares may be sold. Subject to the terms and conditions specified herein (including, without limitation, the accuracy of the representations and warranties of the Company and the performance by the Company of its covenants and other obligations, contained herein and the satisfaction of the additional conditions specified in Section 5 hereof), such Agent shall use its commercially reasonable efforts, consistent with its normal trading and sales practices and applicable law and regulations, to sell all of the Shares so designated by the Company as sales agent in accordance with such instruction. On any Trading Day, the Company shall give at least one business day's prior written notice by telecopy or email to the Agents as to any change of the Agent through whom sales of Shares as sales agent will be made. For the avoidance of doubt, the foregoing limitation shall not apply to sales solely to employees or security holders of the Company or to a trustee or other person acquiring Shares for the accounts of such persons in

which either BofA or ThinkEquity is acting for the Company in a capacity other than as Agent under this Agreement. The Company and the Agents each acknowledge and agree that (A) there can be no assurance that any Agent will be successful in selling any Shares and (B) the Agents will not incur any liability or obligation to the Company if they fail to sell Shares for any reason other than a failure to use their respective commercially reasonable efforts, consistent with its normal trading and sales practices and applicable law and regulations, to sell such Shares as required by this Agreement.

(c) The Company or the Agent through whom the sale of Shares are to be made as sales agent on any Trading Day may, upon notice to the other party hereto by telephone (confirmed promptly by telecopy or email, which confirmation will be promptly acknowledged by the receiving party), suspend the offering of Shares with respect to which such Agent is acting as sales agent for any reason and at any time; provided, however, that such suspension shall not affect or impair the parties' respective obligations with respect to the Shares sold, or with respect to Shares that the Company has agreed to sell, hereunder prior to the giving of such notice.

(d) The gross sales price of any Shares sold pursuant to this Agreement by the applicable Agent acting as sales agent of the Company shall be equal to, in the discretion of such Agent but subject to the specific instructions of the Company, the market price prevailing at the time of sale for the Shares sold by such Agent on the NYSE or otherwise, at prices related to prevailing market prices or at negotiated prices. The compensation payable to an Agent for sales of Shares with respect to which such Agent acts as sales agent shall be equal to 2.0% of the gross sales price for such Shares. The remaining proceeds, after further deduction for any transaction fees, transfer taxes or similar taxes or fees imposed by any Governmental Entity or self-regulatory organization in respect of such sales, shall constitute the net proceeds to the Company for such sales (the "Net Proceeds"). The applicable Agent shall notify the Company as promptly as practicable if any deduction referenced in the preceding sentence will be made. Notwithstanding the foregoing, in the event the Company engages an Agent as sales agent for the sale of Shares that would constitute a "distribution" within the meaning of Rule 100 of Regulation M under the 1934 Act, the Company and such Agent will agree to compensation for such Agent that is customary for such sales.

(e) If acting as sales agent hereunder, the applicable Agent shall provide written confirmation to the Company following the close of trading on the NYSE on each Trading Day on which Shares are sold under this Agreement setting forth (i) the number of Shares sold on such day, (ii) the aggregate gross sales proceeds of the Shares, (iii) the aggregate Net Proceeds to the Company and (iv) the aggregate compensation payable by the Company to such Agent with respect to such sales.

(f) Under no circumstances shall the aggregate gross sales price or number, as the case may be, of Shares offered or sold pursuant to this Agreement, or which are the subject of instructions to an Agent as sales agent pursuant to Section 2(b) hereof, exceed the aggregate gross sales price or number, as the case may be, of Shares (i) referred to in the preamble paragraph of this Agreement, as reduced by prior sales of Shares under this Agreement, (ii) available for sale under the Registration Statement or (iii) duly authorized from time to time to be issued and sold under this Agreement by the Company or approved for listing on the NYSE, and, in each case referred to in clause (ii) and (iii), notified to the Agents in writing. In addition, under no circumstances shall any Shares with respect to which the Agent acts as sales agent be offered or sold, or be the subject of instructions to an Agent as sales agent pursuant to Section 2(b) hereof, at a price lower than the minimum price therefor duly authorized from time to time by the Company and notified to the Agents in writing. The Agents shall have no responsibility for maintaining records with respect to Shares available for sale under the Registration Statement or for determining the aggregate gross sales price, number or minimum price of Shares duly authorized by the Company.

(g) Settlement for sales of Shares will occur on the second business day that is also a Trading Day following the trade date on which such sales are made, unless another date shall be agreed to in writing by the Company and the applicable Agents (each such day, a "Settlement Date"). On each Settlement Date for the sale of Shares through an Agent as sales agent, such Shares shall be delivered by the Company to such Agent in book-entry form to such Agent's account at The Depository Trust Company against payment by such Agent of the Net Proceeds from the sale of such Shares in same day funds delivered to an account designated by the Company. If the Company shall default on its obligation to deliver Shares through an Agent as sales agent on any Settlement Date, the Company shall (i) indemnify and hold such Agent harmless against any loss, claim or damage arising from or as a result of such default by the Company and (ii) pay such Agent any commission to which it would otherwise be entitled absent such default.

(h) Notwithstanding any other provision of this Agreement, the Company shall not offer or sell, or instruct an Agent to offer or sell, any Shares through an Agent as sales agent (and, by notice to the Agents given by telephone (confirmed promptly by telecopy or email), shall cancel any instructions for any such offer or sale of any Shares prior to the commencement of the periods referenced below), and the Agents shall not be obligated to make any such offer or sale of Shares, (i) during any period in which the Company is, or could be deemed to be, in possession of material non-public information or (ii) except as provided in Section 2(i) hereof, at any time during the period commencing on the 10th business day prior to the time the Company issues a press release containing, or shall otherwise publicly announce, its earnings, revenues or other operating results for a fiscal period or periods (each, an “Earnings Announcement”) through and including the time that is 24 hours after the time that the Company files a Quarterly Report on Form 10-Q or an Annual Report on Form 10-K (a “Filing Time”) that includes financial statements as of and for the same fiscal period or periods, as the case may be, covered by such Earnings Announcement.

(i) Notwithstanding clause (ii) of Section 2(h) hereof, if the Company wishes to offer or sell Shares to an Agent as sales agent at any time during the period from and including an Earnings Announcement through and including the corresponding Filing Time, the Company shall first (i) prepare and deliver to such Agent (with a copy to counsel for the Agents) a Current Report on Form 8-K that includes substantially the same financial and related information (together with management’s discussion and analysis thereof) that was included in such Earnings Announcement (other than any earnings projections and similar forward-looking data and officers’ quotations) (each, an “Earnings 8-K”), in form and substance reasonably satisfactory to such Agent, and, prior to its filing, obtain the written consent of such Agent to such filing (which consent shall not be unreasonably withheld), (ii) provide such Agent with the officers’ certificate, opinions and letters of counsel and accountants’ letter specified in Section 3(o), (p) and (q), respectively, hereof, (iii) afford such Agent the opportunity to conduct a due diligence review in accordance with Section 3(u) hereof prior to filing such Earnings 8-K and (iv) file such Earnings 8-K with the Commission. For purposes of clarity, the parties hereto agree that (A) the delivery of any officers’ certificate, opinion or letter of counsel or accountants’ letter pursuant to this Section 2(i) shall not relieve the Company from any of its obligations under this Agreement with respect to any Quarterly Report on Form 10-Q or Annual Report on Form 10-K, as the case may be, including, without limitation, the obligation to deliver officers’ certificates, opinions and letters of counsel and accountants’ letters as provided in Section 3(o), (p) and (q), respectively, hereof, and (B) this Section 2(i) shall in no way affect or limit the operation of clause (i) of Section 2(h) hereof, which shall have independent application.

(j) The Agents shall not have any obligation to purchase Shares as principal, whether from the Company or otherwise, unless the Company and the applicable Agents agree as set forth below. Shares purchased from the Company by the applicable Agents, individually or in a syndicate, as principal shall be made in accordance with terms agreed upon between such Agents and the Company as evidenced by a Terms Agreement. The applicable Agents’ commitment to purchase Shares from the Company as principal shall be deemed to have been made on the basis of the accuracy of the representations and warranties of the Company, and performance by the Company of its covenants and other obligations, herein contained and shall be subject to the terms and conditions herein set forth. At the time of each Terms Agreement, the applicable Agents shall specify the requirements, if any, for the officers’ certificate, opinions and letters of counsel and accountants’ letter pursuant to Section 3(o), (p) and (q), respectively, hereof. In the event of a conflict between the terms of this Agreement and a Terms Agreement, the terms of such Terms Agreement shall control.

Section 3. Covenants. The Company agrees with the Agents:

(a) *Compliance with Securities Regulations and Commission Requests*. The Company, subject to Section 3(b) and 3(c) hereof, will comply with the requirements of Rule 430B, and will promptly notify the Agents, and confirm the notice in writing, (i) when any post-effective amendment to the Registration Statement or any new registration statement relating to the Shares shall become effective or any amendment or supplement to the Prospectus shall have been filed (other than an amendment or supplement providing solely for the determination of the terms of an offering of securities unless related to an offering of Shares, as to which the Company will only be obligated to notify the applicable Agents), (ii) of the receipt of any comments from the Commission, (iii) of any request by the Commission for any amendment to the Registration Statement or any amendment or supplement to the Prospectus, including any document incorporated by reference therein, or for additional information, (iv) of the issuance by the Commission of any stop order suspending the effectiveness of the Registration Statement or any

post-effective amendment thereto or any notice of objection to the use of the Registration Statement or any post-effective amendment thereto pursuant to Rule 401(g)(1) or of the issuance of any order preventing or suspending the use of any preliminary prospectus or the Prospectus or any amendment or supplement thereto, or of the suspension of the qualification of any Shares for offering or sale in any jurisdiction, or of the initiation or threatening of any proceedings for any of such purposes or of any examination pursuant to Section 8(d) or 8(e) of the 1933 Act concerning the Registration Statement and (v) if the Company becomes the subject of a proceeding under Section 8A of the 1933 Act in connection with any offering of Shares. In connection with a Terms Agreement, the Company will prepare and file with the Commission, subject to Section 3(c) hereof, a pricing supplement with respect to the offer and sale of Shares covered by such Terms Agreement. The Company will effect all filings required under Rule 424(b), in the manner and within the time period required by Rule 424(b) (without reliance on Rule 424(b)(8)), and will take such steps as it deems necessary to ascertain promptly whether the form of prospectus transmitted for filing under Rule 424(b) was received for filing by the Commission and, in the event that it was not, it will promptly file such prospectus. The Company will make every reasonable effort to prevent the issuance of any stop, prevention or suspension order and, if any such order is issued, to obtain the lifting thereof as soon as practicable. In the event of any issuance of a notice of objection, by the Commission, the Company shall take all necessary action to permit offers and sales of Shares by or through the Agents, including, without limitation, amending the Registration Statement or filing a new shelf registration statement relating thereto. The Company shall pay the required Commission filing fees relating to the Shares prior to the time the initial Prospectus Supplement is filed with the Commission or the time any subsequent Prospectus Supplement that increases gross offering price or number of Shares that may offered and sold under this Agreement from that referenced in the immediately preceding Prospectus Supplement filed with the Commission.

(b) *Continued Compliance with Securities Laws.* The Company will comply with the 1933 Act, the 1933 Act Regulations, the 1934 Act and the 1934 Act Regulations so as to permit the completion of sales of Shares as contemplated in this Agreement and in the Registration Statement, the General Disclosure Package and the Prospectus. If any event shall occur or condition shall exist as a result of which it is necessary, in the opinion of counsel for the Agents or counsel to the Company, to (i) amend the Registration Statement in order that the Registration Statement will not include an untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading, (ii) amend or supplement the General Disclosure Package or the Prospectus in order that the General Disclosure Package or the Prospectus, as the case may be, 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 not misleading in the light of the circumstances existing at the time it is delivered to a purchaser or (iii) amend the Registration Statement or amend or supplement the General Disclosure Package or the Prospectus, as the case may be, including, without limitation, the filing of any document incorporated by reference therein, in order to comply with the requirements of the 1933 Act, the 1933 Act Regulations, the 1934 Act or the 1934 Act Regulations, the Company will promptly (A) give the Agents or, in the case of an offer and sale of Shares to the applicable Agents as principal, such Agents written notice of such event or condition, (B) prepare any amendment or supplement as may be necessary to correct such statement or omission or to comply with such requirements and, a reasonable amount of time prior to any proposed filing or use, furnish the Agents or such Agents, as the case may be, with copies of any such amendment or supplement and (C) file with the Commission any such amendment or supplement and use its commercially reasonable efforts to have any amendment to the Registration Statement declared effective by the Commission as soon as possible if the Company is no longer eligible to file an automatic shelf registration statement; provided, however, that the Company shall not file or use any such amendment or supplement to which the Agents or such Agents, as the case may be, or counsel for the Agents shall reasonably object.

(c) *Filing or Use of Amendments and Supplements.* The Company will give the Agents or, in the case of an offer and sale of Shares to the applicable Agents as principal, such Agents written notice of its intention to file or use (i) any amendment to the Registration Statement or any amendment or supplement to the General Disclosure Package or the Prospectus (other than an amendment or supplement thereto relating solely to the offering of securities unless related to an offering of Shares), whether pursuant to the 1933 Act, the 1934 Act or otherwise, or (ii) any new Prospectus Supplement that includes information in addition to the information referred to in Section 3(n) hereof or (iii) a pricing supplement disclosing the offer and sale of Shares covered by a Terms Agreement, will furnish the Agents or such Agents, as the case may be, with copies of any such document a reasonable amount of time prior to such proposed filing or use, as the case may be, and will not file or use any such document to which the Agents or such Agents, as the case may be, or counsel for the Agents shall reasonably object.

(d) *Delivery of Registration Statements.* The Company has furnished or will deliver to the Agents and counsel for the Agents, without charge, signed copies of the Registration Statement as originally filed and 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; provided, however that the Company shall not be required to furnish any document to the Agents or their counsel to the extent such document is available on EDGAR.

(e) *Delivery of Prospectuses.* The Company will furnish to the Agents or, in the case of an offer and sale of Shares to the applicable Agents as principal, such Agents, without charge, upon execution of this Agreement and thereafter during the period in which a prospectus is (or, but for the exception afforded by Rule 172 of the 1933 Act Regulations (“Rule 172”), would be) required by the 1933 Act to be delivered in connection with any offer or sale of Shares, such number of copies of the Prospectus (as amended or supplemented) as the Agents or such Agents, as the case may be, may reasonably request. The Company will also furnish, upon request of the Agents or such Agents, as the case may be, copies of the Prospectus (as amended or supplemented) to each exchange or market on which sales of Shares were made as may be required by the rules and regulations of such exchange or market. Notwithstanding the foregoing, the Company shall not be required to furnish any document under this section to the Agents or their counsel to the extent such document is available on EDGAR.

(f) *Reporting Requirements.* The Company, during the period in which a prospectus is (or, but for the exception afforded by Rule 172, would be) required by the 1933 Act to be delivered in connection with any offer or sale of Shares, will file all documents required to be filed with the Commission pursuant to the 1934 Act within the time periods prescribed by, and meeting the requirements of, the 1934 Act and the 1934 Act Regulations. Additionally, the Company shall report the use of the net proceeds from the sale of any Shares as may be required under the 1933 Act and the 1933 Act Regulations, including, if applicable, Rule 463 of the 1933 Act Regulations.

(g) *Blue Sky Qualifications.* The Company will use commercially reasonable efforts, in cooperation with the Agents or, in the case of an offer and sale of Shares to the applicable Agents as principal, such Agents to qualify the Shares for offering and sale under the applicable securities laws of such states and non-U.S. jurisdictions as the Agents or such Agents, as the case may be, may, from time to time, designate and to maintain such qualifications in effect so long as required to complete the sale of the Shares contemplated by this Agreement; provided, however, that the Company shall not be obligated to file any general consent to service of process or to qualify as a foreign corporation or as a dealer in securities in any jurisdiction in which it is not so qualified or to subject itself to taxation in respect of doing business in any jurisdiction in which it is not otherwise so subject.

(h) *Earnings Statement.* The Company will timely file such reports pursuant to the 1934 Act as are necessary in order to make generally available to its securityholders as soon as practicable an earnings statement for the purposes of, and to provide to the Agents the benefits contemplated by, the last paragraph of Section 11(a) of the 1933 Act.

(i) *Use of Proceeds.* The Company will use the net proceeds received by it from the sale of the Shares pursuant to this Agreement in the manner specified in the Registration Statement, the General Disclosure Package and the Prospectus under “Use of Proceeds.”

(j) *Listing.* The Company will use its reasonable best efforts to effect and maintain the listing of the Shares on, and satisfy the requirements of, the NYSE.

(k) *Notice of Certain Actions.* The Company will not, without the prior written consent of the Agents, unless it gives the Agents at least five business days’ prior written notice, (i) directly or indirectly offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase or otherwise transfer or dispose of any shares of Common Stock or any securities convertible into or exercisable or exchangeable for shares of Common Stock or file any registration statement under the 1933 Act with respect to any of the foregoing or (ii) enter into any swap or any other agreement or transaction that transfers, in whole or in part, directly or indirectly, the economic consequence of ownership of the Common Stock, whether any such swap, agreement or transaction described in clause (i) or (ii) above is to be settled by delivery of Common Stock or such other securities, in cash or otherwise. The foregoing sentence shall not apply to (A) the Shares to be sold hereunder, (B) any shares of Common Stock issued by the Company upon the exercise of

an option or warrant or the conversion of a security outstanding on the date hereof and referred to in the Registration Statement, the General Disclosure Package and the Prospectus, (C) any shares of Common Stock issued or options to purchase Common Stock granted pursuant to existing employee benefit plans of the Company referred to in the Registration Statement, the General Disclosure Package and the Prospectus or (D) any shares of Common Stock issued pursuant to any non-employee director stock plan or dividend reinvestment plan referred to in the Registration Statement, the General Disclosure Package and the Prospectus. Upon receipt of any written notice contemplated above, an Agent may suspend its activity under this Agreement for such period of time as deemed appropriate by such Agent.

(l) *Issuer Free Writing Prospectuses.* The Company agrees that, unless it obtains the prior written consent of the applicable Agents, it 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,” or a portion thereof, required to be filed by the Company with the Commission or retained by the Company under Rule 433. The Company represents that it has treated or agrees that it will treat each such free writing prospectus consented to by the applicable Agents as an “issuer free writing prospectus,” as defined in Rule 433, and that it will comply with the applicable requirements of Rule 433 with respect thereto, including timely filing with the Commission where required, legending and record keeping. If at any time following the issuance of an Issuer Free Writing Prospectus any event shall occur or condition shall exist as a result of which such Issuer Free Writing Prospectus conflicted or would conflict with the information contained in the Registration Statement, any preliminary prospectus or the Prospectus or included or would include an untrue statement of a material fact or omitted or would omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances existing at that subsequent time, not misleading, the Company will promptly notify the applicable Agents and will promptly amend or supplement, at its own expense, such Issuer Free Writing Prospectus to eliminate or correct such conflict, untrue statement or omission.

(m) *No Stabilization or Manipulation.* The Company agrees that neither it nor any affiliate of the Company will take, directly or indirectly, any action which is designed, or would be expected, to cause or result in, or which constitutes, the stabilization or manipulation of the price of any security of the Company to facilitate the sale or resale of any Shares or to result in a violation of Regulation M under the 1934 Act.

(n) *Update of Activity under this Agreement.* The Company shall disclose (i) in each Annual Report on Form 10-K or Quarterly Report on Form 10-Q filed by the Company in respect of any fiscal quarterly period (which, in the case of an Annual Report on Form 10-K, would mean the last quarterly period of the fiscal year) in which sales of Shares were made by or through an Agent under this Agreement (each date on which any such document or amendment thereto is filed, a “Company Periodic Report Date”), or (ii) to the extent required by applicable law and/or interpretations of the Commission, in Prospectus Supplements for each such fiscal quarterly period, the number of Shares sold by or through the Agents under this Agreement during such fiscal quarterly period and the net proceeds received by the Company and the aggregate compensation paid by the Company to the Agents with respect to such sales.

(o) *Delivery of Future Officers’ Certificates.* Upon commencement of the offering of Shares under this Agreement, (A) each time Shares are delivered to the applicable Agents as principal on a Settlement Date, (B) promptly after each (i) date on which the Registration Statement shall be amended or a new registration statement relating to the Shares shall become effective or the Prospectus shall be amended or supplemented (other than (1) by an amendment or supplement providing solely for the determination of the terms of securities, including the Shares, (2) in connection with the filing of a Prospectus Supplement that contains solely the information referred to in Section 3(n) hereof, or (3) in connection with the filing of any Current Report on Form 8-K (other than an Earnings 8-K and any other Current Report on Form 8-K which contains financial statements, supporting schedules or other financial data, including any Current Report on Form 8-K under Item 2.02 of such form that is considered “filed” under the 1934 Act) (each such date, a “Registration Statement Amendment Date”), (ii) date on which an Earnings 8-K shall be filed with the Commission as contemplated by Section 2(i) hereof (a “Company Earnings Report Date”) and (iii) Company Periodic Report Date, and (C) promptly after each reasonable request by the Agents (each date of any such request by the Agents, a “Request Date”), the Company will furnish or cause to be furnished to the Agents or, in the case of clause (A) above, the applicable Agents an officers’ certificate, dated such Settlement Date, such Registration Statement Amendment Date, such Company Earnings Report Date, such Company Periodic Report Date or such Request Date, as the case may be, in form and substance reasonably satisfactory to the Agents, or, in

the case of clause (A) above, such Agents, as the case may be, to the effect that the statements contained in the officers' certificate referred to in Section 5(f) hereof that was last furnished to the Agents or, in the case of clause (A) above, such Agents, as the case may be, are true and correct as of the date of such certificate as though made at and as of the date of such certificate (except that such statements shall be deemed to relate to the Registration Statement, the General Disclosure Package and the Prospectus as amended and supplemented at the date of such certificate) or, in lieu of such certificate, a certificate of the same tenor as the certificate referred to in Section 5(f) hereof that, but modified as necessary to relate to the Registration Statement, the General Disclosure Package and the Prospectus as amended and supplemented at the date of such certificate. As used in this Section 3(o), to the extent there shall be a sale of Shares on or following any Registration Statement Amendment Date, Company Earnings Report Date, Company Periodic Report Date or Request Date, "promptly" shall be deemed to be at or prior to the Applicable Time for such sale.

(p) *Delivery of Future Opinions and Letters of Counsel.* Upon commencement of the offering of Shares under this Agreement, (A) each time Shares are delivered to the applicable Agents as principal on a Settlement Date and (B) promptly after each Registration Statement Amendment Date, Company Earnings Report Date, Company Periodic Report Date or Request Date, the Company will furnish or cause to be furnished to the Agents or, in the case of clause (A) above, the applicable Agents the written opinions and letters of each of counsel to the Company (who shall be reasonably acceptable to the Agents) or, in the case of clause (A) above, such Agents, as the case may be,) and counsel to the Agents, dated such Settlement Date, such Registration Statement Amendment Date, such Company Earnings Report Date, such Company Periodic Report Date or such Request Date, as the case may be, in form and substance reasonably satisfactory to the Agents, or, in the case of clause (A) above, such Agents, as the case may be, of the same tenor as the respective opinions and letters referred to in Section 5(b) and 5(c), as applicable, hereof but modified as necessary to relate to the Registration Statement, the General Disclosure Package and the Prospectus as amended and supplemented to the date of such opinion and letter or, in lieu of any such opinion and letter, counsel last furnishing such opinion and letter to the Agents or, in the case of clause (A) above, such Agents, as the case may be, shall furnish the Agents or, in the case of clause (A) above, such Agents, as the case may be, with a letter substantially to the effect that the Agents or, in the case of clause (A) above, such Agents, as the case may be, may rely on such counsel's last opinion and letter to the same extent as though each were dated the date of such letter authorizing reliance (except that statements in such last opinion and letter shall be deemed to relate to the Registration Statement, the General Disclosure Package and the Prospectus as amended and supplemented to the date of such letter authorizing reliance). As used in this Section 3(p), to the extent there shall be a sale of Shares on or following any Registration Statement Amendment Date, Company Earnings Report Date, Company Periodic Report Date or Request Date, "promptly" shall be deemed to be at or prior to the Applicable Time for such sale.

(q) *Delivery of Future Accountants' Letters.* Upon commencement of the offering of Shares under this Agreement, (A) each time Shares are delivered to the applicable Agents as principal on a Settlement Date and (B) promptly after each Registration Statement Amendment Date, Company Earnings Report Date, Company Periodic Report Date or Request Date, the Company will cause its independent accountants to furnish to the Agents or, in the case of clause (A) above, the applicable Agents a letter, dated such Settlement Date, such Registration Statement Amendment Date, such Company Earnings Report Date, such Company Periodic Report Date or such Request Date, as the case may be, in form and substance reasonably satisfactory to the Agents, or, in the case of clause (A) above, such Agents, as the case may be, of the same tenor as the letter referred to in Section 5(d) hereof but modified as necessary to relate to the Registration Statement, the General Disclosure Package and the Prospectus as amended and supplemented to the date of such letter. As used in this paragraph, to the extent there shall be a sale of Shares on or following any Registration Statement Amendment Date, Company Earnings Report Date, Company Periodic Report Date or Request Date, "promptly" shall be deemed to be at or prior to the Applicable Time for such sale.

(r) *Waiver of Future Delivery Obligations.* The Company may notify the Agents by telephone (confirmed promptly by electronic mail), or by such other method as the Company and the Agents shall mutually agree in writing, at any time until 5:00 p.m., New York City time, on the second business day preceding any Representation Date (other than the Company Periodic Report Date relating to the date of filing of the Company's Annual Report on Form 10-K) that it does not intend to sell Shares under this Agreement for the period commencing on such Representation Date and continuing until the next succeeding Representation Date. If the Company shall have provided such notice, the requirements to provide the certificate pursuant to Section 3(o) hereunder, legal

opinions and negative assurance letters, as the case may be, pursuant to Section 3(p) hereunder, a letter or letters from accountants pursuant to Section 3(q) hereunder shall be waived in respect of such Representation Date. Notwithstanding the foregoing, if the Company delivers an Issuance Notice to an Agent at a time that is (i) following a Representation Date in respect of which deliveries to the Agents of the documents required by any of Section 3(o), Section 3(p), and Section 3(q) hereunder were waived, and (ii) prior to the next Representation Date, such Agent shall not be obligated to sell any Shares pursuant to such Issuance Notice until all documents required by each such applicable section of this Agreement shall have been provided to such Agent and the Company shall have provided such Agent with a customary due diligence update.

(s) *Trading in the Common Stock.* The Company consents to the Agents trading in the Company's Common Stock for their own account and for the account of their clients at the same time as sales of Shares occur pursuant to this Agreement.

(t) *Non-Consummation Offer.* If, to the knowledge of the Company, any filing required by Rule 424 in connection with an offering of Shares shall not have been made or the representations and warranties of the Company contained in this Agreement shall not be true and correct on the applicable Settlement Date, the Company will offer to any person who has agreed to purchase Shares from or through an Agent the right to refuse to purchase and pay for such Shares.

(u) *Due Diligence Review.* The Company will cooperate with any due diligence review reasonably requested by the Agents or counsel for the Agents, fully and in a timely manner, in connection with offers and sales of Shares from time to time, including, without limitation, and upon reasonable notice, providing information and making available documents and appropriate corporate officers, during regular business hours and at the Company's principal offices.

(v) *Renewal Deadline.* If, immediately prior to the third anniversary of the initial effective date of the Registration Statement (the "Renewal Deadline"), this Agreement is still in effect or any Shares purchased by an Agent as principal remain unsold, the Company will, prior to the Renewal Deadline, (i) promptly notify the Agents and (ii) promptly file, if it is eligible to do so, an automatic shelf registration statement relating to the Shares, in a form and substance satisfactory to the Agents. If, at the time the Company intends to file such a new automatic shelf registration statement, it is not eligible to do so, the Company will, prior to the Renewal Deadline, (i) promptly notify the Agents, (ii) promptly file a new shelf registration statement on the proper form relating to the Shares, in a form and substance satisfactory to the Agents, (iii) use its reasonable best efforts to cause such new shelf registration statement to be declared effective within 60 days after the Renewal Deadline and (iv) promptly notify the Agents of such effectiveness. The Company will take all other action necessary or appropriate to permit the offering and sale of the Shares to continue as contemplated in the expired Registration Statement. References herein to the "Registration Statement" shall include such new automatic shelf registration statement or such new shelf registration statement, as the case may be.

(w) *Ceasing Eligibility For Use of Shelf Registration Statement Form.* If, at any time, during the term of this Agreement or otherwise when Shares purchased by an Agent as principal remain unsold, the Company receives a notice from the Commission pursuant to Rule 401(g)(1) or otherwise ceases to be eligible to use the shelf registration statement form, the Company will (i) promptly notify the Agents, (ii) promptly file a new registration statement or post-effective amendment on the proper form relating to such Shares, in form and substance satisfactory to the Agents, (iii) use its best efforts to cause such new registration statement or post-effective amendment to be declared effective as soon as practicable and (iv) promptly notify the Agents of such effectiveness. The Company will take all other action necessary or appropriate to permit the offering and sale of the Shares to continue as contemplated in the Registration Statement that was the subject of the Rule 401(g)(1) notice or for which the Company has otherwise become ineligible. References herein to the "Registration Statement" shall include such new registration statement or post-effective amendment, as the case may be.

(x) *Regulation M Exemption.* If the exemptive provisions set forth in Rule 101(c)(1) of Regulation M under the 1934 Act become satisfied with respect to the Company or the Shares, the Company shall promptly notify the Agents.

Section 4. Payment of Expenses.

(a) *Expenses.* The Company will pay or cause to be paid all expenses incident to the performance of their obligations under this Agreement, including (i) the preparation, printing and filing of the Registration Statement (including financial statements and exhibits) as originally filed and each amendment thereto, (ii) the preparation, printing and delivery to the Agents of copies of any preliminary prospectus, any Issuer Free Writing Prospectus and the Prospectus and any amendments or supplements thereto and any costs associated with electronic delivery of any of the foregoing by the Agents to investors, (iii) the preparation, issuance and delivery of the certificates for the Shares, including any stock or other transfer taxes and any stamp or other duties payable upon the sale, issuance or delivery of the Shares to the Agents, (iv) the fees and disbursements of the Company's counsel, accountants and other advisors, (v) the qualification of the Shares under securities laws in accordance with the provisions of Section 3(g) hereof, including filing fees and the reasonable fees and disbursements of counsel for the Agents in connection therewith and in connection with the preparation of the Blue Sky Survey and any supplement thereto, (vi) the fees and expenses of any transfer agent or registrar for the Shares, (vii) the costs and expenses of the Company relating to investor presentations on any "road show" undertaken in connection with the marketing of the Shares, (viii) the filing fees incident to, and the reasonable fees and disbursements of counsel for the Agents in connection with, the review by FINRA of the terms of sales of Shares, which amount shall not exceed \$25,000 in the aggregate, (ix) the fees and expenses incurred in connection with the listing of the Shares on the NYSE, (x) the reasonable documented out-of-pocket expenses of the Agents, including the reasonable fees, disbursements and expenses of counsel for the Agents in connection with this Agreement and the Registration Statement and ongoing services in connection with the transactions contemplated hereunder, which amount shall not exceed \$150,000 in the aggregate and (xi) the costs and expenses (including, without limitation, any damages or other amounts payable in connection with legal or contractual liability) associated with the reforming of any contracts for the sale of Shares caused by a breach of the representation contained in the second sentence of Section 1(a)(ii) hereof.

Section 5. Conditions of Agents' Obligations. The obligations of the Agents hereunder are subject to the accuracy of the representations and warranties of the Company contained herein or in certificates of any officer of the Company delivered pursuant to the provisions hereof at each Representation Date, to the performance by the Company of its covenants and other obligations hereunder, and to the following further conditions:

(a) *Effectiveness of Registration Statement and Filing of Prospectus.* The Company shall have filed the Registration Statement with the Commission not earlier than three years prior to the date hereof and the Registration Statement was declared effective by the Commission on February 11, 2021. The Company shall have filed with the Commission the Prospectus on or prior to the date of this Agreement and any subsequent Base Prospectus or Prospectus Supplement prior to any Applicable Time and related Settlement Date, as applicable, in each case in the manner and within the time period required by Rule 424(b), and each Issuer Free Writing Prospectus, if any, in the manner and within the time period required by Rule 433. No stop order suspending the effectiveness of the Registration Statement or any post-effective amendment thereto has been issued under the 1933 Act, no notice of objection of the Commission to the use of the Registration Statement or any post-effective amendment thereto pursuant to Rule 401(g)(1) has been received by the Company, no order preventing or suspending the use of any preliminary prospectus or the Prospectus or any amendment or supplement thereto has been issued and no proceedings for any of those purposes have been instituted or are pending or, to the Company's knowledge, contemplated. The Company shall have complied with any and all requests for additional information on the part of the Commission to the reasonable satisfaction of the Agents. The Company shall have paid the required Commission filing fees relating to the Shares as specified in Section 3(a) hereof.

(b) *Opinion of Counsel for the Agents.* On the date of this Agreement, the Agents shall have received the favorable written opinion or opinions of Shearman & Sterling LLP, counsel for the Agents, dated such date, with respect to such matters as the Agents may reasonably request. In giving such opinion or opinions, such counsel may rely, as to all matters governed by the laws of jurisdictions other than the laws of the State of New York, the General Corporation Law of the State of Delaware and the federal securities laws of the United States, upon the opinions of counsel satisfactory to the Agents. Such counsel may also state that, insofar as such opinion involves factual matters, they have relied, to the extent they deem proper, upon certificates of officers and other representatives of the Company and certificates of public officials.

(c) *Opinions of Counsel to the Company.* On the date of this Agreement, the Agents shall have received:

(i) the favorable written opinion or opinions of Duane Morris LLP, counsel to the Company, dated such date, to the effect as the Agents may reasonably request; and

(ii) the favorable written opinion or opinions of Davidson, Davidson & Kappel, LLC, intellectual property counsel to the Company, dated such date, to the effect as the Agents may reasonably request.

(d) *Accountants' Letter.* On the date of this Agreement, the Agents shall have received a letter from WithumSmith+Brown, PC, dated such date, in form and substance satisfactory to the Agents, containing statements and information of the type ordinarily included in accountants' "comfort letters" to underwriters with respect to the financial statements and other financial information included in the Registration Statement, the General Disclosure Package and the Prospectus or any amendment or supplement thereto.

(e) *Officer's Certificate on Size of ATM Program.* On the date of this Agreement, the Company shall have furnished to the Agents a certificate of an executive officer of the Company, dated such date, in a form satisfactory to the Agents, stating the minimum gross sales price per share for sales of Shares pursuant to this Agreement and the maximum number of Shares that may be issued and sold pursuant to this Agreement or, alternatively, the maximum gross proceeds from such sales, as duly authorized by the Company's board of directors or a duly authorized committee thereof, and specify the number of Shares that have been approved for listing subject to official notice of issuance, on the NYSE.

(f) *Officers' Certificate for the Company.* On the date of this Agreement, there shall not have been, since the date of the latest audited financial statements included in the Registration Statement, the General Disclosure Package and the Prospectus or since the respective dates as of which information is given in the Registration Statement, the General Disclosure Package and the Prospectus, any Material Adverse Change, and the Agents shall have received a certificate of the Chief Executive Officer or President of the Company and of the Chief Financial Officer or Chief Accounting Officer of the Company, dated such date, to the effect that (A) there has been no such Material Adverse Change, (B) the representations and warranties of the Company in this Agreement are true and correct with the same force and effect as though expressly made on and as of such date, (C) the Company has complied with all agreements and satisfied all conditions on its part to be performed or satisfied on or prior to such date and (D) no stop order suspending the effectiveness of the Registration Statement or any post-effective amendment thereto has been issued under the 1933 Act, no notice of objection of the Commission to the use of the Registration Statement or any post-effective amendment thereto pursuant to Rule 401(g)(1) has been received by the Company, no order preventing or suspending the use of any preliminary prospectus or the Prospectus or any amendment or supplement thereto has been issued and no proceedings for any of those purposes have been instituted or are pending or, to their knowledge, contemplated.

(g) *Chief Financial Officer's Certificate.* On the date of this Agreement, the Agents shall have received from the chief financial officer of the Company a certificate with respect to certain financial information contained in the Registration Statement, the General Disclosure Package and the Prospectus, which certificate shall be in form and substance reasonably acceptable to the Agents.

(h) *Listing.* The Shares shall have been approved for listing, subject to official notice of issuance, on the NYSE.

(i) *Additional Documents.* On the date of this Agreement, counsel for the Agents shall have been furnished with such documents and opinions as they may reasonably require for the purpose of enabling them to render the opinions or make the statements requested by the Agents, or in order to evidence the accuracy of any of the representations or warranties, or the fulfillment of any of the covenants, obligations or conditions, contained herein; and all proceedings taken by the Company in connection with the issuance and sale of the Shares as contemplated herein shall be satisfactory in form and substance to the Agents and counsel for the Agents.

(j) *Termination of this Agreement.* If any condition specified in this Section shall not have been fulfilled when and as required to be fulfilled, this Agreement may be terminated by the applicable Agents by notice to the Company at any time, and any such termination shall be without liability of any party to any other party

except the provisions of Sections 1, 3(h), 4, 6, 7, 8, 10, 12, 13, 14, 15 and 16 hereof shall remain in full force and effect notwithstanding such termination.

Section 6. Indemnification.

(a) *Indemnification of the Agents.* The Company agrees to indemnify and hold harmless the Agents, their respective affiliates (as such term is defined in Rule 501(b) of the 1933 Act Regulations (each, an “Affiliate”), selling agents, officers and directors and each person, if any, who controls an Agent within the meaning of Section 15 of the 1933 Act or Section 20 of the 1934 Act as follows:

(i) against any and all loss, liability, claim, damage and expense whatsoever, as incurred, arising out of any untrue statement or alleged untrue statement of a material fact contained in the Registration Statement (or any amendment thereto), including any information deemed to be a part thereof pursuant to Rule 430B, 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 arising out of any untrue statement or alleged untrue statement of a material fact included (A) in any preliminary prospectus, any Issuer Free Writing Prospectus, the General Disclosure Package or the Prospectus (or any amendment or supplement thereto) or (B) in any materials or information provided to investors by, or with the approval of, the Company in connection with the marketing of any offering of Shares (“Marketing Materials”), including any roadshow or investor presentations made to investors by the Company (whether in person or electronically), or the omission or alleged omission in any preliminary prospectus, any Issuer Free Writing Prospectus, the General Disclosure Package or the Prospectus (or any amendment or supplement thereto) or in any Marketing Materials of a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading;

(ii) against any and all loss, liability, claim, damage and expense whatsoever, as incurred, to the extent of the aggregate amount paid in settlement of any litigation, or any investigation or proceeding by any Governmental Entity, commenced or threatened, or of any claim whatsoever based upon any such untrue statement or omission, or any such alleged untrue statement or omission; provided that (subject to Section 6(d) below) any such settlement is effected with the written consent of the Company;

(iii) against any and all expense whatsoever, as incurred (including the fees and disbursements of counsel chosen by the Agents), reasonably incurred in investigating, preparing or defending against any litigation, or any investigation or proceeding by any Governmental Entity, commenced or threatened, or any claim whatsoever based upon any such untrue statement or omission, or any such alleged untrue statement or omission, to the extent that any such expense is not paid under (i) or (ii) above;

provided, however, that this indemnity agreement shall not apply to any loss, liability, claim, damage or expense to the extent arising out of any untrue statement or omission or alleged untrue statement or omission made in the Registration Statement (or any amendment thereto), including any information deemed to be a part thereof pursuant to Rule 430B, or in the General Disclosure Package or the Prospectus (or any amendment or supplement thereto) in reliance upon and in conformity with information furnished to the Company by the Agents in writing expressly for use therein.

(b) *Indemnification of Company, Directors and Officers.* Each Agent, severally and not jointly, agrees to indemnify and hold harmless the Company, its directors, each of its officers who signed the Registration Statement, and each person, if any, who controls the Company within the meaning of Section 15 of the 1933 Act or Section 20 of the 1934 Act against any and all loss, liability, claim, damage and expense described in the indemnity contained in Section 6(a) hereof, as incurred, but only with respect to untrue statements or omissions, or alleged untrue statements or omissions, made in the Registration Statement (or any amendment thereto), including any information deemed to be a part thereof pursuant to Rule 430B, or in the General Disclosure Package or the Prospectus (or any amendment or supplement thereto) in reliance upon and in conformity with the information furnished to the Company by such Agent in writing expressly for use therein, it being understood and agreed upon that the only such information furnished by any Agent consists of each Agent’s name as set forth on the cover page of the Prospectus and under “Plan of Distribution.”

(c) *Actions against Parties; Notification.* Each indemnified party shall give notice as promptly as reasonably practicable to each indemnifying party of any action commenced against it in respect of which indemnity may be sought hereunder, but failure to so notify an indemnifying party shall not relieve such indemnifying party from any liability hereunder to the extent it is not materially prejudiced as a result thereof and in any event shall not relieve it from any liability which it may have otherwise than on account of this indemnity agreement. In the case of parties indemnified pursuant to Section 6(a) hereof, counsel to the indemnified parties shall be selected by the Agents, and, in the case of parties indemnified pursuant to Section 6(b) hereof, counsel to the indemnified parties shall be selected by the Company. An indemnifying party may participate at its own expense in the defense of any such action; provided, however, that counsel to the indemnifying party shall not (except with the prior written consent of the indemnified party) also be counsel to the indemnified party. In no event shall the indemnifying parties be liable for fees and expenses of more than one counsel (in addition to any local counsel) separate from their own counsel for all indemnified parties in connection with any one action or separate but similar or related actions in the same jurisdiction arising out of the same general allegations or circumstances. No indemnifying party shall, without the prior written consent of the indemnified parties, settle or compromise or consent to the entry of any judgment with respect to any litigation, or any investigation or proceeding by any Governmental Entity, commenced or threatened, or any claim whatsoever in respect of which indemnification or contribution could be sought under this Section 6 or Section 7 hereof (whether or not the indemnified parties are actual or potential parties thereto), unless such settlement, compromise or consent (i) includes an unconditional release of each indemnified party from all liability arising out of such litigation, investigation, proceeding or claim 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.

(d) *Settlement without Consent if Failure to Reimburse.* If at any time an indemnified party shall have requested an indemnifying party to reimburse the indemnified party for fees and expenses of counsel, such indemnifying party agrees that it shall be liable for any settlement of the nature contemplated by Section 6(a)(ii) hereof effected without its written consent if (i) such settlement is entered into more than 45 days after receipt by such indemnifying party of the aforesaid request, (ii) such indemnifying party shall have received notice of the terms of such settlement at least 30 days prior to such settlement being entered into and (iii) such indemnifying party shall not have reimbursed such indemnified party in accordance with such request prior to the date of such settlement.

Section 7. Contribution. If the indemnification provided for in Section 6 hereof is for any reason unavailable to or insufficient to hold harmless an indemnified party in respect of any losses, liabilities, claims, damages or expenses referred to therein, then each indemnifying party shall contribute to the aggregate amount of such losses, liabilities, claims, damages and expenses incurred by such indemnified party, as incurred, (i) in such proportion as is appropriate to reflect the relative benefits received by the Company, on the one hand, and the applicable Agents, on the other hand, from the applicable offering of Shares or (ii) if the allocation provided by clause (i) 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 applicable Agents, on the other hand, in connection with the statements or omissions which resulted in such losses, liabilities, claims, damages or expenses, as well as any other relevant equitable considerations.

The relative benefits received by the Company, on the one hand, and the applicable Agents, on the other hand, in connection with the applicable offering of Shares shall be deemed to be in the same proportion as the total net proceeds from such offering (before deducting expenses) received by the Company, on the one hand, bear to the total commissions or underwriting discounts received by the applicable Agents, on the other hand.

The relative fault of the Company, on the one hand, and the applicable Agents, 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 relates to information supplied by the Company or by the applicable Agents and the parties' relative intent, knowledge, access to information and opportunity to correct or prevent such statement or omission.

The Company and the Agents agree that it would not be just and equitable if contribution pursuant to this Section 7 were determined by pro rata allocation (even if the applicable Agents were treated as one entity for such purpose) or by any other method of allocation which does not take account of the equitable considerations referred to above in this Section 7. The aggregate amount of losses, liabilities, claims, damages and expenses incurred by an indemnified party and referred to above in this Section 7 shall be deemed to include any legal or other expenses

reasonably incurred by such indemnified party in investigating, preparing or defending against any litigation, or any investigation or proceeding by any Governmental Entity, commenced or threatened, or any claim whatsoever based upon any such untrue or alleged untrue statement or omission or alleged omission.

Notwithstanding the provisions of this Section 7, no Agent shall be required to contribute any amount in excess of the total commissions or underwriting discounts received by such Agent in connection with Shares placed or underwritten by it for sale to the public.

No person guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the 1933 Act) shall be entitled to contribution from any person who was not guilty of such fraudulent misrepresentation.

For purposes of this Section 7, each person, if any, who controls an Agent within the meaning of Section 15 of the 1933 Act or Section 20 of the 1934 Act and an Agent's Affiliates, selling agents, officers and directors shall have the same rights to contribution as such Agent, and each director of the Company, each officer of the Company who signed the Registration Statement, and each person, if any, who controls the Company within the meaning of Section 15 of the 1933 Act or Section 20 of the 1934 Act shall have the same rights to contribution as the Company. The Agents' respective obligations to contribute pursuant to this Section 7 are several in proportion to the number of Shares placed or underwritten by it in the applicable offering.

Section 8. Representations, Warranties and Agreements to Survive. All representations, warranties and agreements contained in this Agreement or in certificates of officers of the Company submitted pursuant hereto, shall remain operative and in full force and effect regardless of (i) any investigation made by or on behalf of an Agent or its Affiliates, selling agents, officers or directors or any person controlling such Agent, or the Company or its officers or directors, or any person controlling the Company and (ii) delivery of and payment for the Shares.

Section 9. Termination.

(a) This Agreement may be terminated for any reason, at any time, by either the Company or an Agent, as to itself, upon the giving of five days prior written notice to the other parties hereto.

(b) The applicable Agents may terminate a Terms Agreement to which they are a party, at any time at or prior to the Settlement Date, (i) if there has been, in such judgment of such Agents, since the time of execution of such Terms Agreement or since the respective dates as of which information is given in the Registration Statement, the General Disclosure Package or the Prospectus, any Material Adverse Change, or (ii) if there has occurred any material adverse change in the financial markets in the United States or the international financial markets, any outbreak of hostilities or escalation thereof or other calamity or crisis or any change or development involving a prospective change in national or international political, financial or economic conditions, in each case the effect of which is such as to make it, in the judgment of such Agents, impracticable or inadvisable to proceed with the completion of the offering of Shares contemplated by such Terms Agreement or to enforce contracts for the sale of such Shares, or (iii) if trading in any securities of the Company has been suspended or materially limited by the Commission or the NYSE, or (iv) if trading generally on the NYSE, the NYSE Amex or Nasdaq has been suspended or materially limited, or minimum or maximum prices for trading have been fixed, or maximum ranges for prices have been required, by any of said exchanges or by order of the Commission, FINRA or any other Governmental Entity, or (v) if a material disruption has occurred in commercial banking or securities settlement or clearance services in the United States, or (vi) if a banking moratorium has been declared by either Federal or New York authorities.

(c) If the Company and two or more Agents enter into a Terms Agreement pursuant to which such Agents agree to purchase Shares from the Company as principal and one or more of such Agents shall fail at the Settlement Date to purchase the Shares which it or they are obligated to purchase (the "Defaulted Shares"), then the nondefaulting Agents shall have the right, within 24 hours thereafter, to make arrangements for one of them or one or more other Agents or underwriters to purchase all, but not less than all, of the Defaulted Shares in such amounts as may be agreed upon and upon the terms herein set forth; provided, however, that if such arrangements shall not have been completed within such 24-hour period, then:

(i) if the number of Defaulted Shares does not exceed 10% of the number of Shares to be so purchased by all of such Agents on the Settlement Date, the nondefaulting Agents shall be obligated, severally and not jointly, to purchase the full amount thereof in the proportions that their respective initial purchase obligation bears to the purchase obligations of all nondefaulting Agents; or

(ii) if the number of Defaulted Shares exceeds 10% of the number of Shares to be so purchased by all of such Agents on the Settlement Date, such Terms Agreement shall terminate without liability on the part of any nondefaulting Agent.

No action taken pursuant to this Section 9(c) shall relieve any defaulting Agent from liability in respect of its default. In the event of any such default which does not result in a termination of such Terms Agreement, either the nondefaulting Agents or the Company shall have the right to postpone the Settlement Date for a period not exceeding seven days in order to effect any required changes in the Registration Statement, the General Disclosure Package or the Prospectus or in any other documents or arrangements.

(d) In the event of any termination under this Section 9, neither party will have any liability to the other party hereto, except that (i) the Agents shall be entitled to any commissions earned in accordance with Section 2(b) hereof, (ii) if at the time of termination (a) an Agent shall own any Shares purchased by it as principal or (b) an offer to purchase any Shares has been accepted by the Company but the Settlement Date has not occurred, the covenants set forth in Section 3 hereof shall remain in effect until such Shares are resold or so delivered, as the case may be, and (iii) the covenant set forth in Section 3(h) hereof, the provisions of Section 4 hereof, the indemnity and contribution agreements set forth in Sections 6 and 7 hereof, and the provisions of Sections 8, 10, 12, 13, 14, 15 and 16 hereof shall remain in effect.

Section 10. Notices. All notices and other communications hereunder shall be in writing and shall be deemed to have been duly given if mailed or transmitted by any standard form of telecommunication. Notices to the Agents shall be directed to BofA at One Bryant Park, New York, New York 10036, Attention: Syndicate Department (facsimile: (646) 855-3073), with a copy to ECM Legal (facsimile: (212) 230-8730); ThinkEquity at 17 State Street, 41st Floor, New York, New York 10004, Attention: Head of Investment Banking (e-mail: notices@think-equity.com); and with a copy to Shearman & Sterling LLP at 599 Lexington Avenue, New York, New York 10022, Attention: Ilir Mujalovic; and notices to the Company shall be directed to it at 1055 Westlakes Drive, Suite 300, Berwyn, Pennsylvania 19312, Attention: Maria Maccicchini, Ph.D. (facsimile: (610) 727-4001, e-mail: maccicchini@annovisbio.com); with a copy to Duane Morris LLP at 30 S. 17th Street, Philadelphia, Pennsylvania 19103, Attention: Kathleen M. Shay, Esq. and Darrick M. Mix, Esq..

Section 11. No Advisory or Fiduciary Relationship. The Company acknowledges and agrees that (a) each purchase and sale of Shares pursuant to this Agreement, including the determination of the respective initial public offering prices of Shares, if any, and any related discounts and commissions, is an arm's-length commercial transaction between the Company, on the one hand, and the applicable Agents, on the other hand, and does not constitute a recommendation, investment advice, or solicitation of any action by the Agents, (b) the Agents have not assumed and will not assume any advisory or fiduciary responsibility in favor of the Company or other affiliates with respect to any offering of Shares or the process leading thereto (irrespective of whether the applicable Agents have advised or are currently advising the Company or other affiliates on other matters) or any other obligation to the Company except the obligations expressly set forth in this Agreement, (c) the Agents and their respective affiliates may be engaged in a broad range of transactions that involve interests that differ from those of the Company, (d) the Agents have not provided any legal, accounting, financial, regulatory, investment or tax advice to the Company or any other person or entity with respect to any offering of Shares and the Company has consulted its own respective legal, accounting, financial, regulatory and tax advisors to the extent it deemed appropriate, and (e) none of the activities of the Agents in connection with the transactions contemplated herein constitutes a recommendation, investment advice or solicitation of any action by the Agents with respect to any entity or natural person.

Section 12. Recognition of the U.S. Special Resolution Regimes.

(a) In the event that any Agent that is a Covered Entity becomes subject to a proceeding under a U.S. Special Resolution Regime, the transfer from such Agent 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 any Agent that is a Covered Entity or a BHC Act Affiliate of such Agent becomes subject to a proceeding under a U.S. Special Resolution Regime, Default Rights under this Agreement that may be exercised against such Agent 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.

For purposes of this Section 12, a “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.

Section 13. Parties. This Agreement shall each inure to the benefit of and be binding upon the Agents and the Company and their respective successors. Nothing expressed or mentioned in this Agreement is intended or shall be construed to give any person, firm or corporation, other than the Agents, their respective Affiliates and selling agents, the Company and their respective successors and the controlling persons and officers and directors referred to in Sections 6 and 7 and their heirs and legal representatives, any legal or equitable right, remedy or claim under or in respect of this Agreement or any provision herein contained. This Agreement and all conditions and provisions hereof are intended to be for the sole and exclusive benefit of the Agents, their respective Affiliates and selling agents, the Company and their respective successors, and said controlling persons and officers and directors and their heirs and legal representatives, and for the benefit of no other person, firm or corporation. No purchaser of Shares shall be deemed to be a successor by reason merely of such purchase.

Section 14. Trial by Jury. Each of the Company (on its behalf and, to the extent permitted by applicable law, on behalf of its stockholders and affiliates), and the Agents hereby irrevocably waives, to the fullest extent permitted by applicable law, any and all right to trial by jury in any legal proceeding arising out of or relating to this Agreement or the transactions contemplated hereby.

Section 15. GOVERNING LAW. THIS AGREEMENT AND ANY CLAIM, CONTROVERSY OR DISPUTE ARISING UNDER OR RELATED TO THIS AGREEMENT SHALL BE GOVERNED BY, AND CONSTRUED IN ACCORDANCE WITH THE LAWS OF, THE STATE OF NEW YORK WITHOUT REGARD TO ITS CHOICE OF LAW PROVISIONS.

Section 16. Consent to Jurisdiction; Waiver of Immunity. Each of the Company and the Agent agrees that any legal suit, action or proceeding arising out of or based upon this Agreement or the transactions contemplated hereby (“Related Proceedings”) shall be instituted in (i) the federal courts of the United States of America located in the City and County of New York, Borough of Manhattan or (ii) the courts of the State of New York located in the City and County of New York, Borough of Manhattan (collectively, the “Specified Courts”), and irrevocably submits to the exclusive jurisdiction (except for proceedings instituted in regard to the enforcement of a judgment of any Specified Court (a “Related Judgment”), as to which such jurisdiction is non-exclusive) of the Specified Courts in any such suit, action or proceeding. Service of any process, summons, notice or document by mail to a party’s address set forth in Section 10 hereof shall be effective service of process upon such party for any suit, action or proceeding brought in any Specified Court. Each of the Company and the Agents irrevocably and unconditionally waives any objection to the laying of venue of any suit, action or proceeding in the Specified Courts and irrevocably and unconditionally waives and agrees not to plead or claim in any Specified Court that any such suit, action or proceeding brought in any Specified Court has been brought in an inconvenient forum.

Section 17. TIME. TIME SHALL BE OF THE ESSENCE OF THIS AGREEMENT. EXCEPT AS OTHERWISE SET FORTH HEREIN, SPECIFIED TIMES OF DAY REFER TO NEW YORK CITY TIME.

Section 18. Counterparts and Electronic Signatures. This Agreement may be executed in any number of counterparts, each of which shall be deemed to be an original, but all such counterparts shall together constitute one and the same Agreement. Electronic signatures complying with the New York Electronic Signatures and Records Act (N.Y. State Tech. §§ 301-309), as amended from time to time, or other applicable law will be deemed original signatures for purposes of this Agreement. Transmission by telecopy, electronic mail or other transmission method of an executed counterpart of this Agreement will constitute due and sufficient delivery of such counterpart.

Section 19. Effect of Headings. The Section headings herein are for convenience only and shall not affect the construction hereof.

If the foregoing is in accordance with your understanding of our agreement, please sign and return to the Company a counterpart hereof, whereupon this instrument, along with all counterparts, will become a binding agreement between the Agents and the Company in accordance with its terms.

Very truly yours,

Annovis Bio, Inc.

By: /s/ Maria Maccellini

Name: Maria Maccellini

Title: President and Chief Executive Officer

Accepted as of the date hereof:

BofA Securities, Inc.

By: /s/ Gerardo Uhags Carrion

Name: Gerardo Uhags Carrion

Title: Managing Director

ThinkEquity LLC

By: /s/ Eric Lord

Name: Eric Lord

Title: Head of Investment Banking

[Signature Page to Sales Agreement]

ANNOVIS BIO, INC.

Common Stock
(\$0.0001 par value)**TERMS AGREEMENT**BofA Securities, Inc.
ThinkEquity LLCc/o BofA Securities, Inc.
One Bryant Park
New York, New York 10036c/o ThinkEquity LLC
17 State Street, 41st Floor
New York, New York 10004

Ladies and Gentlemen:

Annovis Bio, Inc., a Delaware corporation (the “Company”), proposes, on the basis of the representations and warranties, and subject to the terms and conditions, stated herein and in the ATM Equity OfferingSM Sales Agreement, dated March 31, 2023 (the “Sales Agreement”), between the Company and the agents party thereto, to issue and sell to BofA Securities, Inc. and ThinkEquity LLC as principal for resale (collectively, the “Underwriters”), and the Underwriters severally agree to purchase from the Company the shares of Common Stock specified in the Schedule A hereto (the “[Initial] Securities”), [and to grant to the Underwriters the option to purchase the additional shares of Common Stock specified in the Schedule A hereto (the “Option Securities”, and together with the Initial Securities the “Securities”), in each case]* on the terms specified in Schedule A hereto. Capitalized terms but and not defined herein have the respective meanings ascribed thereto in the Sales Agreement.

[The Company grants an option to the Underwriters, severally and not jointly, to purchase up to an additional [●] Option Securities at the price per share set forth in Schedule A hereto, less an amount per share equal to any dividends or distributions declared by the Company and payable on the Initial Securities but not payable on the Option Securities. The option hereby granted may be exercised for 30 days after the date hereof and may be exercised in whole or in part at any time from time to time upon notice by the Underwriters to the Company setting forth the number of Option Securities as to which the several Underwriters are then exercising the option and the time and date of payment and delivery for such Option Securities. Any such time and date of delivery (a “Date of Delivery”) shall be determined by the Underwriters, but shall not be later than seven full business days after the exercise of said option, nor in any event prior to the Settlement Date (as defined below). If the option is exercised as to all or any portion of the Option Securities, each of the Underwriters, acting severally and not jointly, will purchase that proportion of the total number of Option Securities then being purchased which the number of Initial Securities set forth in Schedule A hereto opposite the name of such Underwriter bears to the total number of Initial Securities, subject, in each case, to such adjustments as BofA in its sole discretion shall make to eliminate any sales or purchases of fractional shares. For purposes of clarity, the parties hereto agree that the officers’ certificate, opinions and letter of counsel and accountants’ letter referred to in Section 3(o), (p) and (q), respectively, of the Sales Agreement are required to be delivered by or on behalf of the Company on the Settlement Date.]*

Payment of the purchase price for, and delivery of certificates for, the Initial Securities shall be made at the offices of Shearman & Sterling LLP, or at such other place as shall be agreed upon by the Underwriters and the Company, at 9:00 A.M. (New

York City time) on the second (or third, if the pricing occurs after 4:30 P.M. (New York City time) on any given day) business day after the date hereof (unless postponed in accordance with the provisions of Section 9(c) of the Sales Agreement), or such other time not later than ten business days after such date as shall be agreed upon by the Underwriters and the Company (such time and date of payment and delivery being herein called "Settlement Date").

In addition, in the event that any or all of the Option Securities are purchased by the Underwriters, payment of the purchase price for, and delivery of certificates for, such Option Securities shall be made at the above-mentioned offices, or at such other place as shall be agreed upon by the Underwriters and the Company, on each Date of Delivery as specified in the notice from the Underwriters to the Company.

Payment shall be made to the Company by wire transfer of immediately available funds to a bank account designated by the Company against delivery to the Underwriters for their respective accounts for the Securities to be purchased by them. It is understood that each Underwriter has authorized BofA as representative of the Underwriters, for its account, to accept delivery of, receipt for, and make payment of the purchase price for, the Initial Securities and the Option Securities, if any, which it has agreed to purchase. BofA, individually and not as representative of the Underwriters, may (but shall not be obligated to) make payment of the purchase price for the Initial Securities or the Option Securities, if any, to be purchased by any Underwriter whose funds have not been received by the Settlement Date or the relevant Date of Delivery, as the case may be, but such payment shall not relieve such Underwriter from its obligations hereunder.

Each of the provisions of the Sales Agreement not related solely to the Agent, as agent of the Company, 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 each such provision had been set forth in full herein. Each of the representations and warranties set forth in the Sales Agreement shall be deemed to have been made at and as of the date of this Terms Agreement, the Applicable Time and any Date of Delivery.

If the foregoing is in accordance with your understanding of our agreement, please sign and return to the Company a counterpart hereof, whereupon this instrument, along with all counterparts, will become a binding agreement between the Underwriters and the Company in accordance with its terms.

THIS TERMS AGREEMENT AND ANY CLAIM, CONTROVERSY OR DISPUTE ARISING UNDER OR RELATED TO THIS TERMS AGREEMENT SHALL BE GOVERNED BY, AND CONSTRUED IN ACCORDANCE WITH, THE LAWS OF THE STATE OF NEW YORK WITHOUT REGARD TO ITS CHOICE OF LAW PROVISIONS.

Very truly yours,

Annovis Bio, Inc.

By:

Name:

Title:

Accepted as of the date hereof:

BofA Securities, Inc.

By:

Name:

Title:

ThinkEquity LLC

By:

Name:

Title:

* Include only if the Underwriters have an option to purchase additional shares of Common Stock from the Company.

NEW YORK
LONDON
SINGAPORE
PHILADELPHIA
CHICAGO
WASHINGTON, DC
SAN FRANCISCO
SILICON VALLEY
SAN DIEGO
SHANGHAI
BOSTON
HOUSTON
LOS ANGELES
HANOI
HO CHI MINH CITY

Duane Morris®

FIRM and AFFILIATE OFFICES

www.duanemorris.com

ATLANTA
BALTIMORE
WILMINGTON
MIAMI
BOCA RATON
PITTSBURGH
NEWARK
LAS VEGAS
CHERRY HILL
LAKE TAHOE
MYANMAR
OMAN

A GCC REPRESENTATIVE OFFICE OF
DUANE MORRIS

MEXICO CITY
ALLIANCE WITH
MIRANDA & ESTAVILLO
SRI LANKA
ALLIANCE WITH
GOWERS INTERNATIONAL

April 3, 2023

Annovis Bio, Inc.
1055 Westlakes Drive, Suite 300
Berwyn, PA 1931

Re: Exhibit 5.1 to Prospectus Supplement

Ladies and Gentlemen:

We are acting as counsel to Annovis Bio, Inc., a Delaware corporation (the “Company”), in connection with the issuance and sale (the “Offering”) by the Company from time to time of common stock, \$0.0001 par value per share (the “Shares”) pursuant to the ATM Equity OfferingSM Sales Agreement, March 31, 2023 (the “**Agreement**”), among the Company and BofA Securities, Inc. and ThinkEquity, as sales agents. The Shares have been registered on a Registration Statement on Form S-3 (File no. 333-252625), (such registration statement, including documents incorporated by reference therein and amendments thereto, the “**Registration Statement**”), filed by the Company with the Securities and Exchange Commission (the “**Commission**”) on February 1, 2021 and declared effective on February 11, 2021.

For purposes of rendering this opinion, we have examined originals or copies (certified or otherwise identified to our satisfaction) of:

- a. the Registration Statement, and the exhibits filed in connection therewith or incorporated by reference therein;
- b. the Company’s base prospectus, dated February 11, 2021, relating to the offering of securities of the Company, which forms a part of, and is substantially in the form included in, the Registration Statement (the “**Base Prospectus**”);
- c. the Company’s prospectus supplement, dated March 31, 2023, filed with the Commission pursuant to Rule 424(b) under the Securities Act of 1933, as amended (the “**Prospectus Supplement**” and, together with the Base Prospectus, the “**Prospectus**”);
- d. the Agreement;

DUANE MORRIS LLP
30 SOUTH 17TH STREET PHILADELPHIA, PA 19103-4196

PHONE: 215.979.1000 FAX: 215.979.1020

April 3, 2023
Page 2

- e. the Amended and Restated Certificate of Incorporation of the Company, as certified by an officer of the Company;
- f. the Amended and Restated Bylaws of the Company, as certified by an officer of the Company; and
- g. resolutions of the Board of Directors of the Company, as attested to by an officer of the Company.

We have also examined such other certificates of public officials, such certificates of executive officers of the Company and such other records, agreements, documents and instruments as we have deemed relevant and necessary as a basis for the opinions hereafter set forth.

In such examination, we have assumed (i) the genuineness of all signatures, (ii) the legal capacity of all natural persons, (iii) the authenticity of all documents submitted to us as originals, (iv) the conformity to original documents of all documents submitted to us as certified, conformed or other copies and the authenticity of the originals of such documents and (v) that all records and other information made available to us by the Company on which we have relied are complete in all material respects. As to all questions of fact material to the opinion expressed herein, we have relied solely upon the above-referenced certificates or comparable documents and upon the representations and warranties contained in the Agreement and other documents delivered pursuant thereto, have not performed or had performed any independent research of public records and have assumed that certificates of or other comparable documents from public officials dated prior to the date hereof remain accurate as of the date hereof.

Based on the foregoing, we are of the opinion that the Shares, when issued and delivered in accordance with the terms of the Agreement, the Registration Statement and the Prospectus, will be validly issued, fully paid and non-assessable.

The foregoing opinion is limited to the laws of the State of Delaware, and we do not express any opinion herein concerning any other law.

The opinion expressed herein is rendered as of the date hereof and is based on existing law, which is subject to change. Where our opinion expressed herein refers to events to occur at a future date, we have assumed that there will have been no changes in the relevant law or facts between the date hereof and such future date. We do not undertake to advise you of any changes in the opinion expressed herein from matters that may hereafter arise or be brought to our attention or to revise or supplement such opinions should the present laws of any jurisdiction be changed by legislative action, judicial decision or otherwise.

Our opinion expressed herein is limited to the matters expressly stated herein and no opinion is implied or may be inferred beyond the matters expressly stated.

April 3, 2023
Page 3

We hereby consent to the use of this letter as an exhibit to the Company's Current Report on Form 8-K filed with the Commission for incorporation by reference into the Registration Statement and to any and all references to our firm in the Prospectus. In giving this consent, we do not admit that we are "experts" within the meaning of Section 11 of the Securities Act or within the category of persons whose consent is required under Section 7 of the Securities Act.

Very truly yours,

/s/ Duane Morris LLP
