

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549**

**FORM S-3
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933**

89bio, Inc.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

2834
(Primary Standard Industrial
Classification Code Number)
142 Sansome Street, 2nd Floor
San Francisco, CA 94104
(415) 500-4614

36-4946844
(I.R.S. Employer
Identification Number)

(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

Rohan Palekar
Chief Executive Officer
89bio, Inc.
142 Sansome Street, 2nd Floor
San Francisco, CA 94104
(415) 500-4614

(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies to:
Ryan A. Murr
Branden C. Berns
Gibson, Dunn & Crutcher LLP
555 Mission Street
San Francisco, CA 94105
(415) 393-8373

Approximate date of commencement of proposed sale to the public: From time to time after this registration statement becomes effective.

If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, please check the following box.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, as amended, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box:

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box.

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer Accelerated filer
Non-accelerated filer Smaller reporting company
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 7(a)(2)(B) of the Securities Act.

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities to be Registered	Amount to be Registered (1)	Proposed Maximum Offering Price Per Unit (2)	Proposed Maximum Aggregate Offering Price (3)	Amount of Registration Fee (4)
Common Stock (5)				
Preferred Stock (6)				
Debt Securities (7)				
Warrants (8)				
Units (9)				
Total	\$250,000,000	N/A	\$250,000,000	\$27,275

- (1) The amount to be registered consists of up to \$250,000,000 of an indeterminate amount of common stock, preferred stock, debt securities, warrants and/or units. There is also being registered hereunder such currently indeterminate number of (i) shares of common stock or other securities of the registrant as may be issued upon conversion of, or in exchange for, convertible or exchangeable debt securities and/or preferred stock registered hereby, or (ii) shares of preferred stock, common stock, debt securities or units as may be issued upon exercise of warrants registered hereby, as the case may be. Any securities registered hereunder may be sold separately or as units with the other securities registered hereunder.
- (2) The proposed maximum aggregate offering price per unit will be determined from time to time by the registrant in connection with the issuance by the registrant of the securities registered hereunder and is not specified as to each class of security pursuant to General Instruction II.D. of Form S-3 under the Securities Act.
- (3) Estimated solely for purposes of computing the registration fee. No separate consideration will be received for (i) common stock or other securities of the registrant that may be issued upon conversion of, or in exchange for, convertible or exchangeable debt securities and/or preferred stock registered hereby, or (ii) preferred stock, common stock, debt securities or units that may be issued upon exercise of warrants registered hereby, as the case may be.
- (4) The registration fee has been calculated in accordance with Rule 457(o) under the Securities Act.
- (5) Including such indeterminate amount of common stock as may be issued from time to time at indeterminate prices or upon conversion of debt securities and/or preferred stock registered hereby, or upon exercise of warrants registered hereby, as the case may be.
- (6) Including such indeterminate amount of preferred stock as may be issued from time to time at indeterminate prices or upon conversion of debt securities and/or preferred stock registered hereby, or upon exercise of warrants registered hereby, as the case may be.
- (7) Including such indeterminate principal amount of debt securities as may be issued from time to time at indeterminate prices or upon exercise of warrants registered hereby, as the case may be.
- (8) Including such indeterminate number of warrants or other rights, including without limitation share purchase or subscription rights, as may be issued from time to time at indeterminate prices.
- (9) Each unit will be issued under a unit agreement and will represent an interest in two or more securities, which may or may not be separable from one another.

The registrant hereby amends this registration statement on such date or dates as may be necessary to delay its effective date until the registrant shall file a further amendment that specifically states that this registration statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933, as amended, or until this registration statement shall become effective on such date as the Commission, acting pursuant to said Section 8(a), may determine.

EXPLANATORY NOTE

This registration statement contains the following documents:

- a base prospectus which covers the offering, issuance and sale by us of up to a maximum aggregate offering price of \$250,000,000 of the securities identified above from time to time in one or more offerings; and
- a sales agreement prospectus supplement covering the offering, issuance and sale by us of up to a maximum aggregate offering price of \$75,000,000 of our common stock that may be issued and sold under a sales agreement, dated March 25, 2021, with SVB Leerink LLC and Cantor Fitzgerald & Co. (the “Sales Agents”).

The base prospectus immediately follows this explanatory note. The specific terms of any securities to be offered pursuant to the base prospectus other than the shares under the sales agreement will be specified in a prospectus supplement to the base prospectus. The specific terms of the securities to be issued and sold under the sales agreement are specified in the sales agreement prospectus supplement that immediately follows the base prospectus. The \$75,000,000 shares of common stock that may be offered, issued and sold under the sales agreement prospectus supplement is included in the \$250,000,000 of securities that may be offered, issued and sold by the registrant under the base prospectus. Upon termination of the sales agreement with the Sales Agents, any portion of the \$75,000,000 included in the sales agreement prospectus supplement that is not sold pursuant to the Sales Agreement will be available for sale in other offerings pursuant to the base prospectus, and if no shares of common stock are sold under the sales agreement, the full \$75,000,000 of securities may be sold in other offerings pursuant to the base prospectus and a corresponding prospectus supplement.

The information in this prospectus is not complete and may be changed. We may not sell these securities or accept an offer to buy these securities until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and it is not soliciting offers to buy these securities in any jurisdiction where such offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED MARCH 25, 2021

PROSPECTUS



**COMMON STOCK
PREFERRED STOCK
DEBT SECURITIES
WARRANTS
UNITS**

From time to time, we may issue, in one or more series or classes, up to \$250,000,000 in aggregate principal amount of our common stock, preferred stock, debt securities, warrants and/or units, at prices and on terms that we will determine at the time of the offering.

This prospectus provides you with a general description of the securities we may offer. Each time we offer securities, we will provide specific terms of the securities offered in a supplement to this prospectus. We may also authorize one or more free writing prospectuses to be provided to you in connection with these offerings. The prospectus supplement and any related free writing prospectus may also add, update or change information contained in this prospectus. We may not sell any securities under this prospectus without delivery of the applicable prospectus supplement. If information in any prospectus supplement is inconsistent with the information in this prospectus, then the information in that prospectus supplement will apply and will supersede the information in this prospectus.

You should read this prospectus, the applicable prospectus supplement and any related free writing prospectus carefully, as well as any documents incorporated by reference, before you invest in any of the securities being offered.

Our shares of common stock are listed on the Nasdaq Global Market under the symbol "ETNB." The last reported sale price of our common stock on the Nasdaq Global Market on March 22, 2021 was \$26.73 per share. We recommend that you obtain current market quotations for our common stock prior to making an investment decision.

Investing in our securities involves a high degree of risk. You should review carefully the risks and uncertainties described under the heading "[Risk Factors](#)" contained in this prospectus beginning on page 5 and any applicable prospectus supplement, and under similar headings in the other documents that are incorporated by reference into this prospectus.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

Prospectus dated _____, 2021

Table of Contents

	Page
ABOUT THIS PROSPECTUS	1
CAUTIONARY STATEMENT REGARDING FORWARD LOOKING STATEMENTS	2
THE COMPANY	4
RISK FACTORS	5
USE OF PROCEEDS	6
DIVIDEND POLICY	7
SECURITIES WE MAY OFFER	8
DESCRIPTION OF SECURITIES	9
PLAN OF DISTRIBUTION	19
LEGAL MATTERS	21
EXPERTS	21
WHERE YOU CAN FIND MORE INFORMATION	22
INCORPORATION BY REFERENCE	23

ABOUT THIS PROSPECTUS

This prospectus is a part of a registration statement on Form S-3 that we filed with the Securities and Exchange Commission (the “SEC” or the “Commission”) utilizing a “shelf” registration process. Under this shelf registration process, we may sell any combination of the securities described in this prospectus in one or more offerings up to a total dollar amount of \$250,000,000. This prospectus provides you with a general description of the securities we may offer.

Each time we sell securities under this prospectus, we will provide a prospectus supplement that will contain specific information about the terms of that offering. We may also authorize one or more free writing prospectuses to be provided to you that may contain material information relating to these offerings. The prospectus supplement and any related free writing prospectus that we may authorize to be provided to you may also add, update or change information contained in this prospectus or in any documents that we have incorporated by reference into this prospectus. You should carefully read both this prospectus and any prospectus supplement together with additional information under the headings “Where You Can Find More Information” and “Incorporation by Reference.”

We have not authorized anyone to provide you with any information other than that contained or incorporated by reference in this prospectus and any applicable prospectus supplement, along with the information contained in any free writing prospectuses we have authorized for use in connection with a specific offering. We take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. This prospectus is an offer to sell only the securities offered hereby, but only under circumstances and in jurisdictions where it is lawful to do so. This prospectus, any applicable supplement to this prospectus or any related free writing prospectus do not constitute an offer to sell or the solicitation of an offer to buy any securities other than the registered securities to which they relate, nor do this prospectus, any applicable supplement to this prospectus or any related free writing prospectus constitute an offer to sell or the solicitation of an offer to buy securities in any jurisdiction to any person to whom it is unlawful to make such offer or solicitation in such jurisdiction.

You should not assume that the information contained in this prospectus, any applicable prospectus supplement or any related free writing prospectus is accurate on any date subsequent to the date set forth on the front of the document or that any information we have incorporated by reference is correct on any date subsequent to the date of the document incorporated by reference, even though this prospectus, any applicable prospectus supplement or any related free writing prospectus is delivered, or securities are sold, on a later date.

Unless the context otherwise requires, we use the terms “89bio,” “company,” “we,” “us,” and “our” in this prospectus to refer to 89bio, Inc. and, where appropriate, our subsidiaries.

CAUTIONARY STATEMENT CONCERNING FORWARD-LOOKING STATEMENTS

This prospectus, including the documents that we incorporate by reference, contains “forward-looking statements” within the meaning of Section 27A of the Securities Act of 1933, as amended (the “Securities Act”), and Section 21E of the Securities Exchange Act of 1934, as amended (the “Exchange Act”). All statements, other than statements of historical facts contained in this prospectus, including statements concerning our plans, objectives, goals, strategies, future events, future revenues or performance, financing needs, plans or intentions relating to acquisitions, business trends and other information referred to in the section entitled “Risk Factors” in this prospectus and the sections entitled “Business,” “Risk Factors” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations” in our Annual Report on Form 10-K for the year ended December 31, 2020, which is incorporated by reference herein, are forward-looking statements. Forward-looking statements generally relate to future events or our future financial or operating performance. In some cases, you can identify forward-looking statements by terms such as “may,” “might,” “will,” “objective,” “intend,” “should,” “could,” “can,” “would,” “expect,” “believe,” “design,” “estimate,” “predict,” “potential,” “plan,” “anticipate,” “target,” “forecast,” or the negative of these terms, and similar expressions intended to identify forward-looking statements. Forward-looking statements are not historical facts and reflect our current views with respect to future events and are based on assumptions and subject to risks and uncertainties. Given these uncertainties, you should not place undue reliance on these forward-looking statements.

There are a number of risks, uncertainties and other important factors that could cause our actual results to differ materially from the forward-looking statements contained in this prospectus. Such risks, uncertainties and other important factors include, among others, the risks, uncertainties and factors set forth in “Risk Factors,” and the following risks, uncertainties and factors:

- our plans to develop and commercialize BIO89-100 or any future product candidates;
- our ongoing and planned clinical trials;
- the timing of and our ability to obtain regulatory approvals for BIO89-100 or any future product candidates;
- the effect of the ongoing COVID-19 pandemic on our business;
- our estimates regarding expenses, future revenue, capital requirements and needs for additional financing;
- our ability to identify additional products or product candidates with significant commercial potential that are consistent with our commercial objectives;
- the rate and degree of market acceptance and clinical utility of BIO89-100 or any future product candidates, if approved;
- our commercialization, marketing and manufacturing capabilities and strategy;
- significant competition in our industry;
- our intellectual property position;
- loss of key members of management;
- failure to successfully execute our growth strategy, including any delays in our planned future growth; and
- our failure to maintain effective internal controls.

There may be other factors that may cause our actual results to differ materially from the forward-looking statements, including factors disclosed in “Risk Factors” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations” in our Annual Report on Form 10-K for the year ended December 31, 2020, which is incorporated by reference herein. You should evaluate all forward-looking statements made in this prospectus in the context of these risks and uncertainties.

[Table of Contents](#)

These factors should not be construed as exhaustive and should be read in conjunction with the other cautionary statements that are included in this prospectus, any accompanying prospectus supplement, information incorporated by reference herein or therein, and any related free-writing prospectus. In addition, we cannot assure you that we will realize the results, benefits or developments that we expect or anticipate or, even if substantially realized, that they will result in the consequences or affect us or our business in the way expected. All forward-looking statements contained in this prospectus are made as of the date of hereof and we undertake no obligation to publicly update or review any forward-looking statements to reflect subsequent events or circumstances.

THE COMPANY

We are a clinical-stage biopharmaceutical company focused on the development and commercialization of innovative therapies for the treatment of liver and cardio-metabolic diseases. Our lead product candidate, BIO89-100, a specifically engineered glycoPEGylated analog of fibroblast growth factor 21, is currently being developed for the treatment of nonalcoholic steatohepatitis (“NASH”) and for the treatment of severe hypertriglyceridemia (“SHTG”). NASH is a severe form of nonalcoholic fatty liver disease, characterized by inflammation and fibrosis in the liver that can progress to cirrhosis, liver failure, hepatocellular carcinoma and death. There are currently no approved products for the treatment of NASH. In September 2020, the Company announced positive topline data from the Phase 1b/2a trial of BIO89-100 in NASH. The company plans to initiate a Phase 2b trial in NASH patients in the first half of 2021. In December 2020, we initiated a paired-biopsy open-label cohort as part of the Phase 1b/2a trial in NASH patients assessing histology endpoints with topline data anticipated by the end of 2021. SHTG is a condition identified by severely elevated levels of triglycerides (greater than or equal to 500 mg/dL), which is associated with an increased risk of NASH, cardiovascular events and acute pancreatitis. We initiated our Phase 2 (ENTRIGUE) trial in SHTG patients in the third quarter of 2020 and expect to report topline data in the second half of 2021.

Corporate Information

We were incorporated in January 2018 in Israel under the name 89Bio Ltd. 89bio, Inc., the registrant whose name appears on the cover page of this prospectus, was incorporated in June 2019 for the purpose of an internal reorganization transaction.

Our principal executive offices are located at 142 Sansome Street, San Francisco, California 94104 and our telephone number is (415) 500-4614. Our website is www.89bio.com. The information on, or that can be accessed through, our website is not part of this prospectus and is not incorporated by reference herein.

RISK FACTORS

Investing in our securities involves risks. You should carefully consider the risks, uncertainties and other factors described in our most recent Annual Report on Form 10-K, as supplemented and updated by subsequent Quarterly Reports on Form 10-Q and Current Reports on Form 8-K that we have filed or will file with the SEC, and in other documents which are incorporated by reference into this prospectus, as well as the risk factors and other information contained in or incorporated by reference into any accompanying prospectus supplement before investing in any of our securities. Our business, financial condition, results of operations, cash flows or prospects could be materially and adversely affected by any of these risks. The risks and uncertainties described in the documents incorporated by reference herein are not the only risks and uncertainties that you may face.

For more information about our SEC filings, please see “Where You Can Find More Information” and “Incorporation of Certain Information by Reference.”

USE OF PROCEEDS

We will retain broad discretion over the use of the net proceeds from the sale of the securities offered hereby. Unless otherwise specified in a prospectus supplement accompanying this prospectus, the net proceeds from the sale by us of the securities to which this prospectus relates will be used for development, manufacturing and scale-up, as well as for working capital and general corporate purposes. We may also use a portion of the proceeds to license, acquire or invest in new programs or for drug development activities related to such programs, however, we have no current commitments to do so. Our expected use of proceeds from the sale of the securities offered hereby represents our current intentions based on our present plans and business condition. As of the date of this prospectus, we cannot predict with certainty all of the particular uses for the proceeds to be received from the sale of the securities offered hereby or the amounts that we will actually spend on the uses set forth above.

Pending the use of the net proceeds, we may invest the proceeds in interest-bearing, investment-grade securities, certificates of deposit or government securities. When we offer and sell the securities to which this prospectus relates, the prospectus supplement related to such offering will set forth our intended use of the proceeds, if any, received from the sale of such securities.

DIVIDEND POLICY

We have never declared or paid cash dividends on our capital stock and have no present intention to pay cash dividends on our common stock for the foreseeable future. Any determination to pay dividends to holders of our common stock will be at the discretion of our board of directors and will depend on many factors, including our financial condition, results of operations, liquidity, earnings, projected capital and other cash requirements, legal requirements, restrictions in the agreements governing any indebtedness we may enter into, business prospects and other factors that our board of directors deems relevant.

SECURITIES WE MAY OFFER

This prospectus contains summary descriptions of the securities we may offer from time to time. These summary descriptions are not meant to be complete descriptions of each security. The particular terms of any security will be described in the applicable prospectus supplement.

DESCRIPTION OF SECURITIES

The following is a summary of the material terms of our capital stock, as well as other material terms of certain provisions of Delaware law, our second amended and restated certificate of incorporation (as amended from time to time, our “certificate of incorporation”), and our second amended and restated bylaws (as amended from time to time, our “bylaws”). This summary does not purport to be complete and is qualified in its entirety by the provisions of our certificate of incorporation and our bylaws. For more information on how you can obtain our certificate of incorporation and our bylaws, see the heading “Where You Can Find Additional Information.”

Our authorized capital stock consists of 100,000,000 shares of common stock, par value \$0.001 per share, and 10,000,000 shares of preferred stock, par value \$0.001 per share.

As of March 1, 2021, 19,946,426 shares of our common stock were issued and outstanding.

Common Stock

Our certificate of incorporation authorizes the issuance of up to 100,000,000 shares of our common stock. All outstanding shares of our common stock are validly issued, fully paid and nonassessable.

The holders of our common stock are entitled to one vote per share on all matters submitted to a vote of stockholders. A majority vote of the shares present in person or represented by proxy and entitled to vote on the subject matter is required for the holders of our common stock to take action on all matters (except for election of directors (as discussed below)), except as otherwise required by law, our certificate of incorporation or our bylaws. Our certificate of incorporation does not provide for cumulative voting in the election of directors. The holders of our common stock will receive ratably any dividends declared by our board of directors out of funds legally available therefor. In the event of our liquidation, dissolution or winding-up, the holders of our common stock will be entitled to share ratably in all assets remaining after payment of or provision for any liabilities.

Registration Rights

Certain holders of shares of our common stock are entitled to rights with respect to the registration of these securities under the Securities Act. These rights are provided under the terms of our investors’ rights agreement, effective as of September 17, 2019 (the “IRA”). The IRA includes demand registration rights, short-form registration rights and piggyback registration rights. All fees, costs and expenses of underwritten registrations under this agreement will be borne by us and all selling expenses, including underwriting discounts and selling commissions, will be borne by the holders of the shares being registered.

Demand Registration Rights

Certain holders of shares of our common stock are entitled to demand registration rights. Under the terms of the IRA, we will be required, upon the written request of at least 50% of the holders of the registrable securities, provided that the anticipated aggregate offering price is at least \$10 million, to file a registration statement on Form S-1 and use commercially reasonable efforts to effect the registration of these shares for public resale. The right to have such shares registered on Form S-1 is further subject to other specified conditions and limitations.

Piggyback Registration Rights

Pursuant to the IRA, if we register any of our common stock either for our own account or for the account of other security holders, the holders of registrable shares party to the IRA are entitled to include their shares in the registration, subject to certain marketing and other limitations. We may terminate or withdraw any registration initiated before the effective date of such registration in our sole discretion.

[Table of Contents](#)

Form S-3 Registration Rights

Pursuant to the IRA, if we are eligible to file a registration statement on Form S-3, upon the written request of at least 10% of the holders of registrable securities to sell registrable securities at an aggregate price of at least \$5 million, we will be required to use commercially reasonable efforts to effect a registration of such shares. The right to have such shares registered on Form S-3 is further subject to other specified conditions and limitations.

Anti-Takeover Effects of our Certificate of Incorporation and Bylaws and Delaware Law

Our certificate of incorporation and our bylaws include a number of provisions that may have the effect of delaying, deferring or preventing another party from acquiring control of us and encouraging persons considering unsolicited tender offers or other unilateral takeover proposals to negotiate with our board of directors rather than pursue non-negotiated takeover attempts.

- **Issuance of undesignated preferred stock:** Under our certificate of incorporation, our board of directors has the authority, without further action by the stockholders, to issue up to 10,000,000 shares of undesignated preferred stock with rights and preferences, including voting rights, designated from time to time by our board of directors. The existence of authorized but unissued shares of preferred stock enables our board of directors to make it more difficult to attempt to obtain control of us by means of a merger, tender offer, proxy contest or otherwise.
- **Classified board:** Our certificate of incorporation establishes a classified board of directors consisting of three classes of directors, with staggered three-year terms. Only one class of directors will be elected at each annual meeting of our stockholders, with the other classes continuing for the remainder of their respective three-year terms. This provision may have the effect of delaying a change in control of our board of directors.
- **Election and removal of directors and board vacancies:** Our bylaws provide that directors will be elected by a plurality vote. Our certificate of incorporation and bylaws also provide that our board of directors has the right to increase or decrease the size of the board and to fill vacancies on the board. Directors may be removed only for cause by the affirmative vote of the holders of at least 66²/₃% of the votes that all our stockholders would be entitled to cast in an annual election of directors. Only our board of directors is authorized to fill vacant directorships. In addition the number of directors constituting our board of directors may be set only by resolution adopted by a majority vote of the directors then in office. These provisions prevent stockholders from increasing the size of our board of directors and gaining control of our board of directors by filling the resulting vacancies with its own nominees.
- **Requirements for advance notification of stockholder nominations and proposals:** Our bylaws establish advance notice procedures with respect to stockholder proposals and the nomination of candidates for election as directors that specify certain requirements as to the timing, form and content of a stockholder's notice. Business that may be conducted at an annual meeting of stockholders will be limited to those matters properly brought before the meeting. These provisions may make it more difficult for our stockholders to bring matters before our annual meeting of stockholders or to nominate directors at annual meetings of stockholders.
- **No written consent of stockholders:** Our certificate of incorporation provides that all stockholder actions be taken by a vote of the stockholders at an annual or special meeting, and that stockholders may not take any action by written consent in lieu of a meeting. This limit may lengthen the amount of time required to take stockholder actions and would prevent the amendment of our bylaws or removal of directors by our stockholders without holding a meeting of stockholders.
- **No stockholder ability to call special meetings:** Our certificate of incorporation and bylaws provide that only a majority of the members of our board of directors then in office may be able to call special meetings of stockholders and only those matters set forth in the notice of the special meeting may be considered or acted upon at a special meeting of stockholders.

[Table of Contents](#)

- **Amendments to certificate of incorporation and bylaws:** Any amendment to our certificate of incorporation will be required to be approved by a majority of our board of directors as well as, if required by law or the certificate of incorporation, a majority of the outstanding shares entitled to vote on the amendment and a majority of the outstanding shares of each class entitled to vote thereon as a class, except that the amendment of provisions to board classification, stockholder action, certificate amendments, and liability of directors must be approved by not less than 66 $\frac{2}{3}$ % of the outstanding shares entitled to vote on the amendment, voting together as a single class. Any amendment to our bylaws must be approved by either a majority of our board of directors or not less than 66 $\frac{2}{3}$ % of the outstanding shares entitled to vote on the amendment, voting together as a single class.

These provisions are designed to enhance the likelihood of continued stability in the composition of our board of directors and its policies, to discourage certain types of transactions that may involve an actual or threatened acquisition of us and to reduce our vulnerability to an unsolicited acquisition proposal. We also designed these provisions to discourage certain tactics that may be used in proxy fights. However, these provisions could have the effect of discouraging others from making tender offers for our shares and, as a consequence, they may also reduce fluctuations in the market price of our shares that could result from actual or rumored takeover attempts.

Section 203 of the Delaware General Corporation Law

We are subject to the provisions of Section 203 of the Delaware General Corporation Law. In general, Section 203 prohibits a publicly held Delaware corporation from engaging in a “business combination” with an “interested stockholder” for a three-year period following the time that this stockholder becomes an interested stockholder, unless the business combination is approved in a prescribed manner.

Choice of Forum

Our certificate of incorporation requires that the Court of Chancery of the State of Delaware be the exclusive forum for the following types of actions or proceedings under Delaware statutory or common law: (1) any derivative action or proceeding brought on our behalf; (2) any action asserting a breach of fiduciary duty owed by any director, officer or other employee to us or our stockholders; (3) any action asserting a claim against us or any director or officer or other employee arising pursuant to the Delaware General Corporation Law, our certificate of incorporation or our bylaws; or (4) any action asserting a claim against us or any director or officer or other employee that is governed by the internal affairs doctrine. This provision would not apply to claims brought to enforce a duty or liability created by the Exchange Act or any other claim for which the federal courts have exclusive jurisdiction. Our certificate of incorporation provides further that the federal district courts of the United States will be the exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act, subject to and contingent upon a final adjudication in the State of Delaware of the enforceability of such exclusive forum provision. Although we believe these provisions benefit us by providing increased consistency in the application of Delaware law for the specified types of actions and proceedings, the provisions may have the effect of discouraging lawsuits against us or our directors or officers.

Transfer Agent and Registrar

American Stock Transfer and Trust Company, LLC serves as the transfer agent and registrar for our common stock.

Listing

Our common stock is listed on the Nasdaq Global Market under the symbol “ETNB.”

Preferred Stock

Under the terms of our certificate of incorporation, our board of directors has the authority, without further action by our stockholders, to issue up to 10,000,000 shares of preferred stock in one or more series, to establish from time to time the number of shares to be included in each such series, to fix the dividend, voting and other rights, preferences and privileges of the shares of each wholly unissued series and any qualifications, limitations or restrictions thereon, and to increase or decrease the number of shares of any such series, but not below the number of shares of such series then outstanding.

Our board of directors may authorize the issuance of preferred stock with voting or conversion rights that could adversely affect the voting power or other rights of the holders of our common stock. The issuance of preferred stock, while providing flexibility in connection with possible acquisitions and other corporate purposes, could, among other things, have the effect of delaying, deferring or preventing a change in our control and may adversely affect the market price of our common stock and the voting and other rights of the holders of our common stock. As of March 1, 2021, there were no shares of preferred stock issued and outstanding, and we have no current plans to issue any shares of preferred stock.

Debt Securities

The paragraphs below describe the general terms and provisions of the debt securities we may issue. When we offer to sell a particular series of debt securities, we will describe the specific terms of the securities in a supplement to this prospectus, including any additional covenants or changes to existing covenants relating to such series. The prospectus supplement also will indicate whether the general terms and provisions described in this prospectus apply to a particular series of debt securities. You should read the actual indenture if you do not fully understand a term or the way we use it in this prospectus.

If we issue debt securities at a discount from their principal amount, then, for purposes of calculating the aggregate initial offering price of the offered securities issued under this prospectus, we will include only the initial offering price of the debt securities and not the principal amount of the debt securities.

We have summarized below the material provisions of the indenture, or indicated which material provisions will be described in the related prospectus supplement. The prospectus supplement relating to any particular securities offered will describe the specific terms of the securities, which may be in addition to or different from the general terms summarized in this prospectus. We have included the form of the indenture as an exhibit to our registration statement of which this prospectus is a part, and it is incorporated into this prospectus by reference. Because the summary in this prospectus and in any prospectus supplement does not contain all of the information that you may find useful, you should read the documents relating to the securities that are described in this prospectus or in any applicable prospectus supplement. Please read “Where You Can Find More Information” in this prospectus to find out how you can obtain a copy of those documents. References below to an “indenture” are references to the indenture, as supplemented, under which a particular series of debt securities is issued. As used under this caption, the term “debt securities” includes the debt securities being offered by this prospectus and all other debt securities issued by us under the indenture.

General

The indenture:

- does not limit the amount of debt securities that we may issue;
- allows us to issue debt securities in one or more series;
- does not require us to issue all of the debt securities of a series at the same time; and
- allows us to reopen a series to issue additional debt securities without the consent of the holders of the debt securities of such series.

[Table of Contents](#)

The prospectus supplement for each offering of debt securities will provide the following terms, where applicable:

- the title of the debt securities and whether they are senior, senior subordinated or subordinated debt securities;
- the aggregate principal amount of the debt securities being offered and any limit on their aggregate principal amount, and, if the series is to be issued at a discount from its face amount, the method of computing the accretion of such discount;
- the price at which the debt securities will be issued, expressed as a percentage of the principal and, if other than the full principal amount thereof, the portion of the principal amount thereof payable upon declaration of acceleration of the maturity thereof or, if applicable, the portion of the principal amount of such debt securities that is convertible into common stock or preferred stock or the method by which any such portion shall be determined;
- if convertible, the terms on which such debt securities are convertible, including the initial conversion price or rate or the method of calculation, how and when the conversion price or exchange ratio may be adjusted, whether conversion or exchange is mandatory, at the option of the holder or at our option, the conversion or exchange period, and any other provision in relation thereto, and any applicable limitations on the ownership or transferability of common stock or preferred stock received on conversion;
- the date or dates, or the method for determining the date or dates, on which the principal of the debt securities will be payable;
- the fixed or variable interest rate or rates of the debt securities, or the method by which the interest rate or rates is determined;
- the date or dates, or the method for determining the date or dates, from which interest will accrue;
- the dates on which interest will be payable;
- the record dates for interest payment dates, or the method by which we will determine those dates;
- the persons to whom interest will be payable;
- the basis upon which interest will be calculated if other than that of a 360-day year of twelve 30-day months;
- Any collateral securing the performance of our obligations under the debt securities;
- the place or places where the principal of, premium, if any, and interest on, the debt securities will be payable;
- where the debt securities may be surrendered for registration of transfer or conversion or exchange;
- where notices or demands to or upon us in respect of the debt securities and the applicable indenture may be served;
- any provisions regarding our right to redeem or purchase debt securities or the right of holders to require us to redeem or purchase debt securities;
- any right or obligation we have to redeem, repay or purchase the debt securities pursuant to any sinking fund or analogous provision;
- the currency or currencies (including any composite currency) in which the debt securities are denominated and payable if other than United States dollars, and the currency or currencies (including any composite currency) in which principal, premium, if any, and interest, if any, will be payable, and if such payments may be made in a currency other than that in which the debt securities are denominated, the manner for determining such payments, including the time and manner of

Table of Contents

determining the exchange rate between the currency in which such securities are denominated and the currency in which such securities or any of them may be paid, and any additions to, modifications of or deletions from the terms of the debt securities to provide for or to facilitate the issuance of debt securities denominated or payable in a currency other than U.S. dollars;

- whether the amount of payments of principal of, premium, if any, or interest on, the debt securities may be determined according to an index, formula or other method and how such amounts will be determined;
- whether the debt securities will be in registered form, bearer form or both, and the terms of these forms;
- whether the debt securities will be issued in whole or in part in the form of a global security and, if applicable, the identity of the depository for such global security;
- any provision for electronic issuance of the debt securities or issuance of the debt securities in uncertificated form;
- whether and upon what terms the debt securities of such series may be defeased or discharged, if different from the provisions set forth in the indenture for the series to which the supplemental indenture or authorizing resolution relates;
- any provisions granting special rights to holders of securities upon the occurrence of such events as specified in the applicable prospectus supplement;
- any deletions from, modifications of, or additions to our events of default or covenants or other provisions set forth in the indenture for the series to which the supplemental indenture or authorizing resolution relates; and
- any other material terms of the debt securities, which may be different from the terms set forth in this prospectus.

We may issue debt securities at a discount below their principal amount and provide for less than the entire principal amount thereof to be payable upon declaration of acceleration of the maturity of the debt securities. We refer to any such debt securities throughout this prospectus as “original issue discount securities.” The applicable prospectus supplement will describe the United States federal income tax consequences and other relevant considerations applicable to original issue discount securities.

Neither the Delaware General Corporation Law nor our governing instruments define the term “substantially all” as it relates to the sale of assets. Additionally, Delaware cases interpreting the term “substantially all” rely upon the facts and circumstances of each particular case. Consequently, to determine whether a sale of “substantially all” of our assets has occurred, a holder of debt securities must review the financial and other information that we have disclosed to the public.

The applicable prospectus supplement will also describe any material covenants to which a series of debt securities will be subject and the applicability of those covenants to any of our subsidiaries to be restricted thereby, which are referred to herein as “restricted subsidiaries.” The applicable prospectus supplement will also describe provisions for restricted subsidiaries to cease to be restricted by those covenants.

Events of Default

Unless the applicable prospectus supplement states otherwise, when we refer to “events of default” as defined in the indentures with respect to any series of debt securities, we mean:

- our failure to pay interest on any debt security of such series when the same becomes due and payable and the continuance of any such failure for a period of 30 days;

Table of Contents

- our failure to pay the principal or premium of any debt security of such series when the same becomes due and payable at maturity, upon acceleration, redemption or otherwise;
- our failure or the failure of any restricted subsidiary to comply with any of its agreements or covenants in, or provisions of, the debt securities of such series or the indenture (as they relate thereto) and such failure continues for a period of 60 days after our receipt of notice of the default from the trustee or from the holders of at least 25 percent in aggregate principal amount of the then outstanding debt securities of that series (except in the case of a default with respect to the provisions of the indenture regarding the consolidation, merger, sale, lease, conveyance or other disposition of all or substantially all of the assets of us (or any other provision specified in the applicable supplemental indenture or authorizing resolution), which will constitute an event of default with notice but without passage of time); or
- certain events of bankruptcy, insolvency or reorganization occur with respect to 89bio or any restricted subsidiary of 89bio that is a significant subsidiary (as defined in the indenture).

If an event of default occurs and is continuing with respect to debt securities of any series outstanding, then the trustee or the holders of 25% or more in principal amount of the outstanding debt securities of that series will have the right to declare the principal amount of all the debt securities of that series to be due and payable immediately. However, the holders of at least a majority in principal amount of outstanding debt securities of such series may rescind and annul such declaration and its consequences, except an acceleration due to nonpayment of principal or interest on such series, if the rescission would not conflict with any judgment or decree and if all existing events of default with respect to such series have been cured or waived.

The indenture also provides that the holders of at least a majority in principal amount of the outstanding debt securities of any series, by notice to the trustee, may, on behalf of all holders, waive any existing default and its consequences with respect to such series of debt securities, other than any event of default in payment of principal or interest.

The indenture will require the trustee to give notice to the holders of debt securities within 90 days after the trustee obtains knowledge of a default that has occurred and is continuing. However, the trustee may withhold notice to the holders of any series of debt securities of any default, except a default in payment of principal or interest, if any, with respect to such series of debt securities, if the trustee considers it in the interest of the holders of such series of debt securities to do so.

The holders of a majority of the outstanding principal amount of the debt securities of any series will have the right to direct the time, method and place of conducting any proceedings for any remedy available to the trustee with respect to such series, subject to limitations specified in the indenture.

Amendment, Supplement and Waiver

Without notice to or the consent of any holder, we and the trustee may amend or supplement the indenture or the debt securities of a series:

- to cure any ambiguity, omission, defect or inconsistency;
- to comply with the provisions of the indenture regarding the consolidation, merger, sale, lease, conveyance or other disposition of all or substantially all of our assets;
- to provide that specific provisions of the indenture shall not apply to a series of debt securities not previously issued or to make a change to specific provisions of the indenture that only applies to any series of debt securities not previously issued or to additional debt securities of a series not previously issued;
- to create a series and establish its terms;
- to provide for uncertificated debt securities in addition to or in place of certificated debt securities;

Table of Contents

- to release a guarantor in respect of any series which, in accordance with the terms of the indenture applicable to such series, ceases to be liable in respect of its guarantee;
- to add a guarantor subsidiary in respect of any series of debt securities;
- to secure any series of debt securities;
- to add to the covenants of 89bio for the benefit of the holders or surrender any right or power conferred upon 89bio;
- to appoint a successor trustee with respect to the securities;
- to comply with requirements of the SEC in order to effect or maintain the qualification of the indenture under the Trust Indenture Act;
- to make any change that does not adversely affect the rights of holders; or
- to conform the provisions of the indenture to the final offering document in respect of any series of debt securities.

The indenture will provide that we and the trustee may amend or supplement any provision of the debt securities of a series or of the indenture relating to such series with the written consent of the holders of at least a majority in principal amount of the outstanding debt securities of such series. However, without the consent of each holder of a debt security the terms of which are directly amended, supplemented or waived, an amendment, supplement or waiver may not:

- reduce the amount of debt securities of such series whose holders must consent to an amendment, supplement or waiver;
- reduce the rate of or extend the time for payment of interest, including defaulted interest;
- reduce the principal of or extend the fixed maturity of any debt security or alter the provisions with respect to redemptions or mandatory offers to repurchase debt securities of a series in a manner adverse to holders;
- make any change that adversely affects any right of a holder to convert or exchange any debt security into or for shares of our common stock or other securities, cash or other property in accordance with the terms of such security;
- modify the ranking or priority of the debt securities of the relevant series;
- release any guarantor of any series from any of its obligations under its guarantee or the indenture otherwise than in accordance with the terms of the indenture;
- make any change to any provision of the indenture relating to the waiver of existing defaults, the rights of holders to receive payment of principal and interest on the debt securities, or to the provisions regarding amending or supplementing the indenture or the debt securities of a particular series with the written consent of the holders of such series, except to increase the percentage required for modification or waiver or to provide for consent of each affected holder of debt securities of such series;
- waive a continuing default or event of default in the payment of principal of or interest on the debt securities; or
- make any debt security payable at a place or in money other than that stated in the debt security, or impair the right of any holder of a debt security to bring suit as permitted by the indenture.

The holders of a majority in aggregate principal amount of the outstanding debt securities of such series may, on behalf of all holders of debt securities of that series, waive any existing default under, or compliance with, any provision of the debt securities of a particular series or of the indenture relating to a particular series of debt securities, other than any event of default in payment of interest or principal.

Defeasance

The indenture will permit us to terminate all our respective obligations under the indenture as they relate to any particular series of debt securities, other than the obligation to pay interest, if any, on and the principal of the debt securities of such series and certain other obligations, at any time by:

- depositing in trust with the trustee, under an irrevocable trust agreement, money or government obligations in an amount sufficient to pay principal of and interest, if any, on the debt securities of such series to their maturity or redemption; and
- complying with other conditions, including delivery to the trustee of an opinion of counsel to the effect that holders will not recognize income, gain or loss for federal income tax purposes as a result of our exercise of such right and will be subject to federal income tax on the same amount and in the same manner and at the same times as would have been the case otherwise.

The indenture will also permit us to terminate all of our respective obligations under the indenture as they relate to any particular series of debt securities, including the obligations to pay interest, if any, on and the principal of the debt securities of such series and certain other obligations, at any time by:

- depositing in trust with the trustee, under an irrevocable trust agreement, money or government obligations in an amount sufficient to pay principal and interest, if any, on the debt securities of such series to their maturity or redemption; and
- complying with other conditions, including delivery to the trustee of an opinion of counsel to the effect that (A) we have received from, or there has been published by, the Internal Revenue Service a ruling, or (B) since the date such series of debt securities were originally issued, there has been a change in the applicable federal income tax law, in either case to the effect that, and based thereon such opinion of counsel shall state that, holders will not recognize income, gain or loss for federal income tax purposes as a result of our exercise of such right and will be subject to federal income tax on the same amount and in the same manner and at the same times as would have been the case otherwise.

In addition, the indenture will permit us to terminate substantially all our respective obligations under the indenture as they relate to a particular series of debt securities by depositing with the trustee money or government obligations sufficient to pay all principal and interest on such series at its maturity or redemption date if the debt securities of such series will become due and payable at maturity within one year or are to be called for redemption within one year of the deposit.

Transfer and Exchange

A holder will be able to transfer or exchange debt securities only in accordance with the indenture. The registrar may require a holder, among other things, to furnish appropriate endorsements and transfer documents, and to pay any taxes and fees required by law or permitted by the indenture.

Concerning the Trustee

The indenture will contain limitations on the rights of the trustee, should it become our creditor, to obtain payment of claims in specified cases or to realize on property received in respect of any such claim as security or otherwise. The indenture will permit the trustee to engage in other transactions; however, if it acquires any conflicting interest, it must eliminate such conflict or resign.

The indenture will provide that in case an event of default occurs and is not cured, the trustee will be required, in the exercise of its power, to use the degree of care of a prudent person in similar circumstances in the conduct of such person's own affairs. The trustee shall be under no obligation to exercise any of the rights or powers vested in it by the indenture at the request or direction of any of the holders pursuant to the indenture, unless such holders shall have offered to the trustee security or indemnity satisfactory to the trustee against the costs, expenses and liabilities which might be incurred by it in compliance with such request or direction.

[Table of Contents](#)

No Recourse Against Others

The indenture will provide that there is no recourse under any obligation, covenant or agreement in the applicable indenture or with respect to any debt security against any of our or our successor's past, present or future stockholders, employees, officers or directors.

Governing Law

The laws of the State of New York will govern the indenture and the debt securities.

Warrants

We may issue warrants for the purchase of common stock, preferred stock and/or debt securities in one or more series, from time to time. We may issue warrants independently or together with common stock, preferred stock and/or debt securities, and the warrants may be attached to or separate from those securities.

If we issue warrants, they will be evidenced by warrant agreements or warrant certificates issued under one or more warrant agreements, which are contracts between us and an agent for the holders of the warrants. We urge you to read the prospectus supplement related to any series of warrants we may offer, as well as the complete warrant agreement and warrant certificate that contain the terms of the warrants. If we issue warrants, forms of warrant agreements and warrant certificates relating to warrants for the purchase of common stock, preferred stock and debt securities will be incorporated by reference into the registration statement of which this prospectus is a part from reports we would subsequently file with the SEC.

Units

We may issue units consisting of any combination of the other types of securities offered under this prospectus in one or more series. We may evidence each series of units by unit certificates that we will issue under a separate agreement. We may enter into unit agreements with a unit agent. Each unit agent will be a bank or trust company that we select. We will indicate the name and address of the unit agent in the applicable prospectus supplement relating to a particular series of units.

The following description, together with the additional information included in any applicable prospectus supplement, summarizes the general features of the units that we may offer under this prospectus. You should read any prospectus supplement and any free writing prospectus that we may authorize to be provided to you related to the series of units being offered, as well as the complete unit agreements that contain the terms of the units. Specific unit agreements will contain additional important terms and provisions and we will file as an exhibit to the registration statement of which this prospectus is a part, or will incorporate by reference from another report that we file with the SEC, the form of each unit agreement relating to units offered under this prospectus.

If we offer any units, certain terms of that series of units will be described in the applicable prospectus supplement, including, without limitation, the following, as applicable:

- the title of the series of units;
- identification and description of the separate constituent securities comprising the units;
- the price or prices at which the units will be issued;
- the date, if any, on and after which the constituent securities comprising the units will be separately transferable;
- a discussion of certain United States federal income tax considerations applicable to the units; and
- any other terms of the units and their constituent securities.

PLAN OF DISTRIBUTION

We may sell the securities from time to time pursuant to underwritten public offerings, negotiated transactions, block trades or a combination of these methods. We may sell the securities to or through underwriters or dealers, through agents, or directly to one or more purchasers. We may distribute securities from time to time in one or more transactions:

- at a fixed price or prices, which may be changed;
- at market prices prevailing at the time of sale;
- at prices related to such prevailing market prices; or
- at negotiated prices.

We may also sell equity securities covered by this registration statement in an “at the market offering” as defined in Rule 415(a)(4) under the Securities Act. Such offering may be made into an existing trading market for such securities in transactions at other than a fixed price, either:

- on or through the facilities of the Nasdaq Global Market or any other securities exchange or quotation or trading service on which such securities may be listed, quoted or traded at the time of sale; and/or
- to or through a market maker otherwise than on the Nasdaq Global Market or such other securities exchanges or quotation or trading services.

Such at the market offerings, if any, may be conducted by underwriters acting as principal or agent.

A prospectus supplement or supplements (and any related free writing prospectus that we may authorize to be provided to you) will describe the terms of the offering of the securities, including, to the extent applicable:

- the name or names of any underwriters, dealers or agents, if any;
- the purchase price of the securities and the proceeds we will receive from the sale;
- any options under which underwriters may purchase additional securities from us;
- any agency fees or underwriting discounts and other items constituting agents’ or underwriters’ compensation;
- any public offering price;
- any discounts or concessions allowed or re-allowed or paid to dealers; and
- any securities exchange or market on which the securities may be listed.

Only underwriters named in the prospectus supplement are underwriters of the securities offered by the prospectus supplement.

If underwriters are used in the sale, they will acquire the securities for their own account and may resell the securities from time to time in one or more transactions at a fixed public offering price or at varying prices determined at the time of sale. The obligations of the underwriters to purchase the securities will be subject to the conditions set forth in the applicable underwriting agreement. We may offer the securities to the public through underwriting syndicates represented by managing underwriters or by underwriters without a syndicate. Subject to certain conditions, the underwriters will be obligated to purchase all of the securities offered by the prospectus supplement. Any public offering price and any discounts or concessions allowed or re-allowed or paid to dealers may change from time to time. We may use underwriters with whom we have a material relationship. We will describe in the prospectus supplement, naming the underwriter, the nature of any such relationship.

We may sell securities directly or through agents we designate from time to time. We will name any agent involved in the offering and sale of securities, and we will describe any commissions we will pay the agent in the

[Table of Contents](#)

prospectus supplement. Unless the prospectus supplement states otherwise, our agent will act on a best-efforts basis for the period of its appointment.

We may authorize agents or underwriters to solicit offers by certain types of institutional investors to purchase securities from us at the public offering price set forth in the prospectus supplement pursuant to delayed delivery contracts providing for payment and delivery on a specified date in the future. We will describe the conditions to these contracts and the commissions we must pay for solicitation of these contracts in the prospectus supplement.

We may provide agents and underwriters with indemnification against civil liabilities related to offerings pursuant to this prospectus, including liabilities under the Securities Act, or contribution with respect to payments that the agents or underwriters may make with respect to these liabilities. Agents and underwriters may engage in transactions with, or perform services for, us in the ordinary course of business.

All securities we offer, other than our shares of common stock, will be new issues of securities with no established trading market. Any underwriters may make a market in these securities, but will not be obligated to do so and may discontinue any market making at any time without notice. We cannot guarantee the liquidity of the trading markets for any securities.

Any underwriter may engage in overallotment, stabilizing transactions, short covering transactions and penalty bids in accordance with Regulation M under the Exchange Act. Overallotment involves sales in excess of the offering size, which create a short position. Stabilizing transactions permit bids to purchase the underlying security so long as the stabilizing bids do not exceed a specified maximum. Short covering transactions involve purchases of the securities in the open market after the distribution is completed to cover short positions. Penalty bids permit the underwriters to reclaim a selling concession from a dealer when the securities originally sold by the dealer are purchased in a stabilizing or covering transaction to cover short positions. Those activities may cause the price of the securities to be higher than it would otherwise be. If commenced, the underwriters may discontinue any of the activities at any time. These transactions may be effected on any exchange or over-the-counter market or otherwise.

Any underwriters who are qualified market makers on the Nasdaq Global Market may engage in passive market making transactions in the securities on the Nasdaq Global Market in accordance with Rule 103 of Regulation M, during the business day prior to the pricing of the offering, before the commencement of offers or sales of the securities. Passive market makers must comply with applicable volume and price limitations and must be identified as passive market makers. In general, a passive market maker must display its bid at a price not in excess of the highest independent bid for such security; if all independent bids are lowered below the passive market maker's bid, however, the passive market maker's bid must then be lowered when certain purchase limits are exceeded. Passive market making may stabilize the market price of the securities at a level above that which might otherwise prevail in the open market and, if commenced, may be discontinued at any time.

LEGAL MATTERS

Certain legal matters, including the legality of the securities offered, will be passed upon for us by Gibson, Dunn & Crutcher LLP, San Francisco, California. Additional legal matters may be passed upon for us or any underwriters, dealers or agents, by counsel that we will name in the applicable prospectus supplement.

EXPERTS

The consolidated financial statements of 89bio, Inc. as of December 31, 2020, and for the year then ended, have been incorporated by reference herein and in the registration statement in reliance upon the report of KPMG LLP, independent registered public accounting firm, incorporated by reference herein, and upon the authority of said firm as experts in accounting and auditing.

The December 31, 2019 consolidated financial statements incorporated in this prospectus by reference from the Company's Annual Report on Form 10-K have been audited by Deloitte & Touche LLP, an independent registered public accounting firm, as stated in their report, which is incorporated herein by reference. Such consolidated financial statements have been so incorporated in reliance upon the report of such firm given upon their authority as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and special reports, proxy statements and other information with the SEC, and we have filed with the SEC a registration statement on Form S-3 under the Securities Act of 1933, as amended (the “Securities Act”) with respect to the securities offered by this prospectus. This prospectus, which forms part of the registration statement, does not contain all of the information included in the registration statement, including its exhibits and schedules. For further information about us and the securities described in this prospectus, you should refer to the registration statement, its exhibits and schedules and our reports, proxies, information statements and other information filed with the SEC.

Our filings are available to the public on the Internet, through a database maintained by the SEC at www.sec.gov. We also maintain a website at www.89bio.com. We have included our website address for the information of prospective investors and do not intend it to be an active link to our website. Information contained on our website does not constitute a part of this prospectus or any applicable prospectus supplement (or any document incorporated by reference herein or therein).

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to incorporate by reference much of the information we file with the SEC, which means that we can disclose important information to you by referring you to those publicly available documents. The information that we incorporate by reference in this prospectus is considered to be part of this prospectus.

Because we are incorporating by reference future filings with the SEC, this prospectus is continually updated and those future filings may modify or supersede some of the information included or incorporated in this prospectus. This means that you must look at all of the SEC filings that we incorporate by reference to determine if any of the statements in this prospectus or in any document previously incorporated by reference have been modified or superseded. This prospectus incorporates by reference the documents listed below and any future filings we make with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended, or the Exchange Act (in each case, other than those documents or the portions of those documents not deemed to be filed) between the date of the initial registration statement and the effectiveness of the registration statement and following the effectiveness of the registration statement until the offering of the securities under the registration statement is terminated or completed, except that we are not incorporating by reference any information furnished (and not filed) with the SEC, including any information furnished pursuant to Items 2.02 or 7.01 of Form 8-K or related exhibits furnished pursuant to Item 9.01 of Form 8-K:

- Annual Report on [Form 10-K](#) for the year ended December 31, 2020 filed with the SEC on March 25, 2021; and
- the description of our common stock contained in our registration statement on [Form 8-A](#) filed with the SEC on November 1, 2019, including any amendments or reports filed for the purposes of updating this description.

We also incorporate by reference into this prospectus all documents (other than current reports furnished under Item 2.02, Item 7.01 or Item 9.01 of Form 8-K and exhibits filed on such form that are related to such items) that are filed by us with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act (i) after the date of the initial filing of the registration statement of which this prospectus forms a part and prior to effectiveness of the registration statement, and (ii) after the date of this prospectus but prior to the termination of the offering. These documents include, without limitation, Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, as well as proxy statements.

You may request a copy of these filings, at no cost, by contacting us, either orally or in writing, at the following:

89bio, Inc.
142 Sansome Street, 2nd Floor
San Francisco, California 94104
(415) 500-4614

We maintain a website at www.89bio.com. Information about us, including our reports filed with the SEC, is available through that site. Such reports are accessible at no charge through our website and are made available as soon as reasonably practicable after such material is filed with or furnished to the SEC. Our website and the information contained on that website, or connected to that website, are not incorporated by reference in this prospectus.

You may read and copy any materials we file with the SEC at the SEC's website mentioned under the heading "Where You Can Find More Information." The information on the SEC's website is not incorporated by reference in this prospectus.

The information in this preliminary prospectus is not complete and may be changed. These securities may not be sold until the registration statement filed with the Securities and Exchange Commission is effective. This preliminary prospectus is not an offer to sell nor does it seek an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED MARCH 25, 2021

PROSPECTUS SUPPLEMENT



Up to \$75,000,000

Common Stock

We have entered into a sales agreement (“sales agreement”) with SVB Leerink LLC (“SVB Leerink”) and Cantor Fitzgerald & Co. (“Cantor” and together with SVB Leerink, the “Sales Agents”) relating to shares of our common stock, \$0.001 par value per share, offered by this prospectus supplement and the accompanying prospectus. In accordance with the terms of the sales agreement, we may offer and sell shares of our common stock having an aggregate offering price of up to \$75,000,000 from time to time through the Sales Agents.

Our common stock is listed on the Nasdaq Global Market under the trading symbol “ETNB.” On March 22, 2021, the last reported sale price of our common stock was \$26.73 per share.

Sales of our common stock, if any, under this prospectus supplement and the accompanying prospectus may be made in sales deemed to be an “at the market offering” as defined in Rule 415(a)(4) promulgated under the Securities Act of 1933, as amended (the “Securities Act”). The Sales Agents are not required to sell any specific number or dollar amounts of securities, but will act as sales agents using commercially reasonable efforts consistent with their normal trading and sales practices, on mutually agreed terms between the Sales Agents and us. There is no arrangement for funds to be received in any escrow, trust or similar arrangement.

The Sales Agents will be entitled to compensation at a commission equal to 3.0% of the aggregate gross sales price per share sold under the sales agreement. In connection with the sale of our common stock on our behalf, the Sales Agents will be deemed to be “underwriters” within the meaning of the Securities Act and the compensation of the Sales Agents will be deemed to be underwriting commissions or discounts. We have also agreed to provide indemnification and contributions to the Sales Agents against certain civil liabilities, including liabilities under the Securities Act. See “Plan of Distribution” beginning on page S-13 of this prospectus supplement for additional information regarding the Sales Agents’ compensation.

Investing in our common stock involves a high degree of risk. Before making an investment decision, you should review carefully and consider all of the information set forth in this prospectus supplement, the accompany prospectus and the documents incorporated by reference in this prospectus supplement. See “[Risk Factors](#)” beginning on page S-7 of this prospectus and in the documents incorporated by reference into this prospectus supplement.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus supplement or the accompanying prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

We are an “emerging growth company” under the federal securities laws and are subject to reduced public company reporting requirements.

SVB Leerink

Cantor

The date of this prospectus supplement is _____, 2021.

TABLE OF CONTENTS

ABOUT THIS PROSPECTUS SUPPLEMENT	S-1
PROSPECTUS SUPPLEMENT SUMMARY	S-3
THE OFFERING	S-6
RISK FACTORS	S-7
SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS	S-9
USE OF PROCEEDS	S-10
DILUTION	S-11
PLAN OF DISTRIBUTION	S-13
LEGAL MATTERS	S-15
EXPERTS	S-16
WHERE YOU CAN FIND MORE INFORMATION	S-16
INCORPORATION OF CERTAIN INFORMATION BY REFERENCE	S-17

ABOUT THIS PROSPECTUS SUPPLEMENT

This prospectus supplement is part of a registration statement that we have filed with the Securities and Exchange Commission (“SEC”) utilizing a “shelf” registration process. Under the shelf registration statement we may offer shares of our common stock, preferred stock, debt securities, warrants and units, including common stock or preferred stock upon conversion of debt securities, common stock upon conversion of preferred stock, or common stock, preferred stock or debt securities upon the exercise of warrants, having an aggregate offering price of up to \$250,000,000. Under this prospectus supplement, we may offer shares of our common stock having an aggregate offering price of up to \$75,000,000 from time to time at prices and on terms to be determined by market conditions at the time of offering.

We provide information to you about this offering of shares of our common stock in two separate documents that are bound together: (1) this prospectus supplement, which describes the specific details regarding this offering; and (2) the accompanying prospectus, which provides general information, some of which may not apply to this offering. Generally, when we refer to this “prospectus,” we are referring to both documents combined. If information in this prospectus supplement is inconsistent with the accompanying prospectus, you should rely on this prospectus supplement. However, if any statement in one of these documents is inconsistent with a statement in another document having a later date—for example, a document incorporated by reference in this prospectus supplement—the statement in the document having the later date modifies or supersedes the earlier statement as our business, financial condition, results of operations and prospects may have changed since the earlier dates.

We have not, and the Sales Agents have not, authorized any other person to provide you with any information or to make any representations other than those contained in or incorporated by reference in this prospectus supplement, the accompanying prospectus and any free writing prospectus prepared by or on behalf of us or to which we have referred you. We and the Sales Agents take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. We and the Sales Agents are not making an offer to sell or soliciting an offer to buy our securities in any jurisdiction in which an offer or solicitation is not authorized or in which the person making that offer or solicitation is not qualified to do so or to anyone to whom it is unlawful to make an offer or solicitation. You should assume that the information appearing in this prospectus supplement, the accompanying prospectus, the documents incorporated by reference into this prospectus supplement and in any free writing prospectus that we may authorize for use in connection with this offering, is accurate only as of the date of those respective documents. Our business, financial condition, results of operations and prospects may have changed since those dates. You should read this prospectus supplement, the accompanying prospectus, the documents incorporated by reference into this prospectus supplement and any free writing prospectus that we may authorize for use in connection with this offering, in their entirety before making an investment decision. You should also read and consider the information in the documents to which we have referred you in the sections of this prospectus supplement captioned “Where You Can Find More Information” and “Incorporation of Certain Information by Reference.”

We are offering to sell, and seeking offers to buy, shares of common stock only in jurisdictions where offers and sales are permitted. The distribution of this prospectus supplement and the accompanying prospectus and the offering of our common stock in certain jurisdictions may be restricted by law. Persons outside the United States who come into possession of this prospectus supplement and the accompanying prospectus must inform themselves about, and observe any restrictions relating to, the offering of our common stock and the distribution of this prospectus supplement and the accompanying prospectus supplement outside the United States. This prospectus supplement and the accompanying prospectus do not constitute, and may not be used in connection with, an offer to sell, or a solicitation of an offer to buy, any securities offered by this prospectus supplement and the accompanying prospectus by any person in any jurisdiction in which it is unlawful for such person to make such an offer or solicitation.

We obtained the industry, market and competitive position data used throughout this prospectus and in the documents incorporated by reference herein from our own internal estimates and research, as well as from

[Table of Contents](#)

industry and general publications, and research, surveys and studies conducted by third parties. Internal estimates are derived from publicly available information released by industry analysts and third-party sources, our internal research and our industry experience, and are based on assumptions made by us based on such data and our knowledge of the industry and market, which we believe to be reasonable. In addition, while we believe the industry, market and competitive position data included in this prospectus and in the documents incorporated by reference herein is reliable and based on reasonable assumptions, we have not independently verified any third-party information, and all such data involve risks and uncertainties and are subject to change based on various factors, including those discussed in the section titled “Risk Factors” in this prospectus and in the section titled “Risk Factors” in our Annual Report on Form 10-K for the year ended December 31, 2020, which is incorporated by reference herein. These and other factors could cause results to differ materially from those expressed in the estimates made by the independent parties and by us.

This prospectus, including the information incorporated by reference into this prospectus, include trademarks, service marks and trade names owned by us or others. All trademarks, service marks and trade names included or incorporated by reference in this prospectus or any related free writing prospectus are the property of their respective owners.

PROSPECTUS SUPPLEMENT SUMMARY

This summary highlights selected information contained elsewhere in this prospectus or incorporated by reference in this prospectus supplement. This summary does not contain all of the information that you should consider before deciding to invest in our common stock. You should read the entire prospectus supplement, including the information incorporated by reference herein, the accompanying prospectus and any related free writing prospectus, carefully, including the section titled “Risk Factors” contained in this prospectus supplement, the accompanying prospectus and any related free writing prospectus, and under similar headings in the other documents that are incorporated by reference into this prospectus supplement, and our financial statements and notes thereto included in our Annual Report on Form 10-K for the year ended December 31, 2020, which are incorporated by reference herein, before making an investment decision. Some of the statements in this summary constitute forward-looking statements, see “Special Note Regarding Forward-Looking Statements.” In this prospectus supplement, unless the context requires otherwise, references to “we,” “us,” “our,” “89bio” or the “company” refer to 89bio, Inc., in each case together with its consolidated subsidiaries.

Our Company

Overview

We are a clinical-stage biopharmaceutical company focused on the development and commercialization of innovative therapies for the treatment of liver and cardio-metabolic diseases. Our lead product candidate, BIO89-100, a specifically engineered glycoPEGylated analog of fibroblast growth factor 21, is currently being developed for the treatment of nonalcoholic steatohepatitis (“NASH”) and for the treatment of severe hypertriglyceridemia (“SHTG”). NASH is a severe form of nonalcoholic fatty liver disease, characterized by inflammation and fibrosis in the liver that can progress to cirrhosis, liver failure, hepatocellular carcinoma and death. There are currently no approved products for the treatment of NASH. In September 2020, the Company announced positive topline data from the Phase 1b/2a trial of BIO89-100 in NASH. The company plans to initiate a Phase 2b trial in NASH patients in the first half of 2021. In December 2020, we initiated a paired-biopsy open-label cohort as part of the Phase 1b/2a trial in NASH patients assessing histology endpoints with topline data anticipated by the end of 2021. SHTG is a condition identified by severely elevated levels of triglycerides (greater than or equal to 500 mg/dL), which is associated with an increased risk of NASH, cardiovascular events and acute pancreatitis. We initiated our Phase 2 trial (ENTRIGUE) in SHTG patients in the third quarter of 2020 and expect to report topline data in the second half of 2021.

Risks Associated with our Business

Our business is subject to a number of risks that you should be aware of before making an investment decision. You should carefully consider all of the information set forth in this prospectus and, in particular, you should evaluate the specific factors set forth under “Risk Factors” included elsewhere in this prospectus supplement, the accompanying prospectus and any related free writing prospectus, and under similar headings in the other documents that are incorporated by reference into this prospectus supplement, including our Annual Report on Form 10-K for the year ended December 31, 2020, in deciding whether to invest in our common stock. Among these important risks are the following:

- We are a clinical-stage biopharmaceutical company with a limited operating history and no products approved for commercial sale. We have incurred net losses since our inception, we expect to incur significant and increasing operating losses and we may never be profitable. Our stock is a highly speculative investment.
- The ongoing COVID-19 pandemic has resulted and may in the future result in significant disruptions to our clinical trials or other business operations, which could have a material adverse effect on our business.

- Our business depends on the success of BIO89-100, our only product candidate under clinical development, which has not completed a pivotal trial. If we are unable to obtain regulatory approval for and successfully commercialize BIO89-100 or other future product candidates, or we experience significant delays in doing so, our business will be materially harmed.
- Clinical drug development involves a lengthy and expensive process with uncertain timelines and uncertain outcomes, and the results of prior preclinical or clinical trials are not necessarily predictive of our future results.
- If we experience delays in clinical testing, our commercial prospects will be adversely affected, our costs may increase and our business may be harmed.
- If we encounter difficulties in enrolling patients in our clinical trials, our clinical development activities could be delayed or otherwise adversely affected.
- BIO89-100 and any future product candidates may cause undesirable side effects or have other properties that could delay or prevent their regulatory approval or limit the commercial profile of an approved label.
- We are developing BIO89-100 for the treatment of NASH, an indication for which there are no approved products. This makes it difficult to predict the timing and costs of the clinical development of BIO89-100 for the treatment of NASH.
- Lack of efficacy, adverse events or undesirable side effects may emerge in clinical trials conducted by third parties developing FGF product candidates, which could adversely affect our stock price, our ability to attract additional capital and our development program.
- Interim, topline and preliminary data from our clinical trials that we announce or publish from time to time may change as more patient data become available and are subject to audit and verification procedures that could result in material changes in the final data.
- We have relied on, and expect to continue to rely on, third-party manufacturers to produce BIO89-100 or any future product candidates. Any failure by a third-party manufacturer to produce acceptable product candidates for us pursuant to our specifications and regulatory standards may delay or impair our ability to initiate or complete our clinical trials, obtain and maintain regulatory approvals or commercialize approved products.
- The manufacture of biologic products is complex and we are subject to many manufacturing risks, any of which could substantially increase our costs and limit supply of our products.
- We will require substantial additional capital to finance our operations, which may not be available to us on acceptable terms, or at all. As a result, we may not complete the development and commercialization of BIO89-100 or develop new product candidates.
- We face substantial competition, which may result in others discovering, developing or commercializing competing products before or more successfully than us.
- Unstable market and economic conditions may have serious adverse consequences on our business and financial condition.
- Our Loan and Security Agreement with Silicon Valley Bank contains certain covenants that could adversely affect our operations and, if an event of default were to occur, we could be forced to repay any outstanding indebtedness sooner than planned and possibly at a time when we do not have sufficient capital to meet this obligation.
- BIO89-100 has not received regulatory approval. If we are unable to obtain regulatory approvals to market BIO89-100 or any future product candidates, our business will be adversely affected.

- Our success depends upon our ability to obtain and maintain intellectual property protection for our products and technologies.
- We rely on a license from Teva and a sublicense from ratiopharm to patents and know-how related to glycoPEGylation technology that are used in the development, manufacture and commercialization of BIO89-100. Any termination or loss of significant rights, including the right to glycoPEGylation technology, or breach, under these agreements or any future license agreement related to our product candidates, would materially and adversely affect our ability to continue the development and commercialization of the related product candidates.

Corporate Information

We were incorporated in January 2018 in Israel under the name 89Bio Ltd. 89bio, Inc., the registrant whose name appears on the cover page of this prospectus, was incorporated in June 2019 for the purpose of an internal reorganization transaction.

Our principal executive offices are located at 142 Sansome Street, San Francisco, California 94104 and our telephone number is (415) 500-4614. Our website is www.89bio.com. The information contained on our website is not incorporated by reference into this prospectus or any accompanying prospectus supplement, and you should not consider any information contained on, or that can be accessed through, our website as part of this prospectus supplement and the accompanying prospectus in deciding whether to purchase our shares of common stock.

THE OFFERING

Common stock offered by us	Shares of our common stock having an aggregate offering price of up to \$75,000,000.
Common stock to be outstanding after this offering	Up to 22,737,496 shares, assuming sales of 2,805,836 shares of our common stock in this offering at an assumed offering price of \$26.73 per share, which was the last reported sale price of our common stock on the Nasdaq Global Market on March 22, 2021. The actual number of shares issued will vary depending on the sales prices at which our common stock is sold under this offering.
Plan of Distribution	“At the market offering” that may be made from time to time through the Sales Agents. See “Plan of Distribution” on page S-13 of this prospectus supplement.
Use of Proceeds	We intend to use the net proceeds from this offering, if any, for development, manufacturing and scale-up, as well as for working capital and general corporate purposes. See “Use of Proceeds” on page S-10 of this prospectus supplement.
Risk Factors	You should read the “Risk Factors” section of this prospectus supplement and the accompanying prospectus and in the documents incorporated by reference into this prospectus supplement for a discussion of factors you should carefully consider before deciding to purchase shares of our common stock.
Nasdaq Global Market symbol	“ETNB”

The number of our shares of common stock outstanding is based on 19,931,660 shares of common stock outstanding as of December 31, 2020, and excludes the following, all as of December 31, 2020:

- 1,898,395 shares of our common stock issuable upon the exercise of stock options outstanding as of December 31, 2020, under our 2019 Equity Incentive Plan (as amended and restated, the “2019 Plan”) at a weighted-average exercise price of \$12.79 per share;
- 538,613 shares of our common stock issuable upon the exercise of stock options granted subsequent to December 31, 2020, under the 2019 Plan at a weighted-average exercise price of \$23.04 per share;
- 25,000 shares of our common stock issuable upon exercise of an outstanding warrant at an exercise price of \$22.06 per share (which expires on June 30, 2025);
- 1,433,991 shares of our common stock reserved for future issuance under our 2019 Plan, as well as any automatic increase in the number of shares of common stock reserved for future issuance thereunder; and
- 355,806 shares of our common stock reserved for future issuance under our 2019 Employee Stock Purchase Plan, as well as any automatic increase in the number of shares of common stock reserved for future issuance thereunder.

RISK FACTORS

Investing in our common stock involves a high degree of risk. Before deciding whether to invest in our common stock, you should consider carefully the risks and uncertainties described below and discussed under the heading “Risk Factors” contained in our most recent Annual Report on Form 10-K, and in our subsequent Quarterly Reports on Form 10-Q, as well as any amendments thereto reflected in subsequent filings with the SEC, which are incorporated by reference into this prospectus supplement in their entirety, together with other information in this prospectus supplement, the accompanying prospectus, the documents incorporated by reference and any free writing prospectus that we may authorize for use in connection with this offering. The risks described in these documents are not the only ones we face, but those that we consider to be material. There may be other unknown or unpredictable economic, business, competitive, regulatory or other factors that could have material adverse effects on our future results. Past financial performance may not be a reliable indicator of future performance, and historical trends should not be used to anticipate results or trends in future periods. If any of these risks actually occurs, our business, financial condition, results of operations or cash flow could be seriously harmed. This could cause the trading price of our common stock to decline, resulting in a loss of all or part of your investment. Please also read carefully the section below entitled “Special Note Regarding Forward-Looking Statements.”

Additional Risks Related to This Offering

Management will have broad discretion as to the use of the proceeds from this offering, and may not use the proceeds effectively.

Because we have not designated the amount of net proceeds from this offering to be used for any particular purpose, our management will have broad discretion as to the application of the net proceeds from this offering and could use them for purposes other than those contemplated at the time of the offering. Our management may use the net proceeds for corporate purposes that may not improve our financial condition or market value.

You may experience immediate and substantial dilution.

The offering price per share in this offering may exceed the net tangible book value per share of our common stock outstanding prior to this offering. Assuming that 2,805,836 shares of our common stock are sold in this offering, based on an assumed sale price of \$26.73 per share, the last sale price of a share of our common stock on the Nasdaq Global Market on March 22, 2021, you will experience immediate dilution, representing the difference between the price you pay and our as adjusted net tangible book value per share as of December 31, 2020, after giving effect to this offering, of \$14.64 per share. The exercise of outstanding stock options may result in further dilution of your investment. See the section titled “Dilution” below for a more detailed illustration of the dilution you would incur if you participate in this offering.

You may experience future dilution as a result of future equity offerings.

To raise additional capital, we may in the future offer additional shares of our common stock or other securities convertible into or exchangeable for our common stock at prices that may not be the same as the price per share in this offering. We may sell shares or other securities in any other offering at a price per share that is less than the price per share paid by investors in this offering, and investors purchasing shares or other securities in the future could have rights superior to existing stockholders. The price per share at which we sell additional shares of our common stock, or securities convertible or exchangeable into common stock, in future transactions may be higher or lower than the price per share paid by investors in this offering.

We do not intend to pay dividends in the foreseeable future.

We have never paid cash dividends on our common stock and currently do not plan to pay any cash dividends in the foreseeable future.

It is not possible to predict the aggregate proceeds resulting from sales made under the sales agreement.

Subject to certain limitations in the sales agreement and compliance with applicable law, we have the discretion to deliver placement notices to the Sales Agents at any time throughout the term of the sales agreement. The number of shares that are sold through the applicable Sales Agent after delivering a placement notice will fluctuate based on a number of factors, including the market price of our common stock during the sales period, any limits we may set with the applicable Sales Agent in any applicable placement notice and the demand for our common stock. Because the price per share of each share sold pursuant to the sales agreement will fluctuate over time, it is not currently possible to predict the aggregate proceeds to be raised in connection with sales under the sales agreement.

Sales of common stock offered hereby will be in an “at the market offering,” and investors who buy shares at different times will likely pay different prices.

Investors who purchase shares in this offering at different times will likely pay different prices, and accordingly may experience different levels of dilution and different outcomes in their investment results. We will have discretion, subject to market demand, to vary the timing, prices and number of shares sold in this offering. In addition, subject to the final determination by our board of directors or any restrictions we may place in any applicable placement notice delivered to the applicable Sales Agent, there is no minimum or maximum sales price for shares to be sold in this offering. Investors may experience a decline in the value of the shares they purchase in this offering as a result of sales made at prices lower than the prices they paid.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains “forward-looking statements” within the meaning of the federal securities laws, which statements involve substantial risks and uncertainties. In some cases, you can identify forward-looking statements by terms such as “may,” “might,” “will,” “objective,” “intend,” “should,” “could,” “can,” “would,” “expect,” “believe,” “design,” “estimate,” “predict,” “potential,” “plan,” “anticipate,” “target,” “forecast” or the negative of these terms, and similar expressions intended to identify forward-looking statements.

Forward-looking statements involve known and unknown risks, uncertainties and other factors that could cause our actual results to differ materially from the forward-looking statements expressed or implied in this prospectus. Such risks, uncertainties and other factors include, among others, the factors disclosed in the section titled “Risk Factors” in this prospectus and the sections titled “Risk Factors” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations” in our Annual Report on Form 10-K for the year ended December 31, 2020, which is incorporated by reference herein, and the following risks, uncertainties and factors:

- our plans to develop and commercialize BIO89-100 or any future product candidates;
- our ongoing and planned clinical trials;
- the timing of and our ability to obtain regulatory approvals for BIO89-100 or any future product candidates;
- the effect of the ongoing COVID-19 pandemic on our business;
- our estimates regarding expenses, future revenue, capital requirements and needs for additional financing;
- our ability to identify additional products or product candidates with significant commercial potential that are consistent with our commercial objectives;
- the rate and degree of market acceptance and clinical utility of BIO89-100 or any future product candidates, if approved;
- our commercialization, marketing and manufacturing capabilities and strategy;
- significant competition in our industry;
- our intellectual property position;
- loss of key members of management;
- failure to successfully execute our growth strategy, including any delays in our planned future growth;
- our failure to maintain effective internal controls; and
- our expected use of net proceeds from this offering.

We caution you that the risks, uncertainties and other factors referred to above, elsewhere in this prospectus and in the documents incorporated by reference herein may not contain all of the risks, uncertainties and other factors that may affect our future results and operations. Moreover, new risks will emerge from time to time. It is not possible for our management to predict all risks. In addition, we cannot assure you that we will realize the results, benefits or developments that we expect or anticipate or, even if substantially realized, that they will result in the consequences or affect us or our business in the way expected. Forward-looking statements are not historical facts, and reflect our current views with respect to future events. Given the significant uncertainties, you should evaluate all forward-looking statements made in this prospectus in the context of these risks and uncertainties and not place undue reliance on these forward-looking statements as predictions of future events.

All forward-looking statements in this prospectus apply only as of the date made and are expressly qualified in their entirety by the cautionary statements included in this prospectus. We disclaim any intent to publicly update or revise any forward-looking statements to reflect subsequent events or circumstances, except as required by law.

USE OF PROCEEDS

We may issue and sell shares of our common stock having aggregate sales proceeds of up to \$75,000,000 from time to time. Because there is no minimum offering amount required pursuant to the sales agreement, the actual total public offering amount, commissions and proceeds to us, if any, are not determinable at this time. Actual net proceeds will depend on the number of shares we sell and the prices at which such sales occur. There can be no assurance that we will sell any shares under or fully utilize the sales agreement with SVB Leerink and Cantor as a source of financing.

We currently intend to use the net proceeds from the sale of the common stock offered by us hereunder, if any, for development, manufacturing and scale-up, as well as for working capital and general corporate purposes. We may also use a portion of the proceeds to license, acquire or invest in new programs or for drug development activities related to such programs, however, we have no current commitments to do so.

The amounts and timing of our use of the net proceeds from this offering will depend on a number of factors, such as the timing and progress of our research and development efforts, the timing and progress of any partnering and commercialization efforts, technological advances and the competitive environment for our products. As of the date of this prospectus supplement, we cannot specify with certainty all of the particular uses for the net proceeds to us from the sale of the securities offered by us hereunder. Accordingly, our management will have broad discretion in the timing and application of these proceeds. Pending application of the net proceeds as described above, we intend to temporarily invest the proceeds in short-term, interest-bearing instruments.

DILUTION

If you purchase common stock in this offering, your ownership interest will be diluted to the extent of the difference between the purchase price per share and the as adjusted net tangible book value per share after giving effect to this offering. We calculate net tangible book value per share by dividing the net tangible book value, which is total tangible assets less total liabilities, by the number of outstanding shares of our common stock. Dilution represents the difference between the portion of the amount per share paid by purchasers of shares in this offering and the as adjusted net tangible book value per share of our common stock immediately after giving effect to this offering. Our net tangible book value as of December 31, 2020, was approximately \$202.4 million, or \$10.15 per share.

After giving effect to the assumed sale of 2,805,836 shares of our common stock at a sale price of \$26.73 per share, the last sale price of our common stock on the Nasdaq Global Market on March 22, 2021, after deducting commissions and estimated aggregate offering expenses payable by us, our as adjusted net tangible book value as of December 31, 2020, would have been \$274.8 million, or \$12.09 per share of common stock. This represents an immediate increase in the as adjusted net tangible book value of \$1.94 per share to our existing stockholders and an immediate dilution of \$14.64 per share to new investors purchasing shares in this offering. The following table illustrates this per share dilution:

Assumed offering price per share	\$26.73
Net tangible book value per share as of December 31, 2020	\$10.15
Increase in net tangible book value per share attributable to new investors in offering	<u>\$ 1.94</u>
As adjusted net tangible book value per share as of December 31, 2020, after giving effect to this offering	<u>\$12.09</u>
Dilution per share to new investors in this offering	<u><u>\$14.64</u></u>

The above illustration of dilution per share to investors participating in this offering assumes no exercise of outstanding options to purchase our common stock.

Changes in the assumed public offering price of \$26.73 per share would not affect our as adjusted net tangible book value after this offering because this offering is currently limited to \$75,000,000. However, each \$1.00 increase (decrease) in the assumed public offering price of \$26.73 per share would increase (decrease) the dilution per share to new investors by approximately \$0.05 per share (\$0.06) per share, assuming that the aggregate dollar amount of shares offered by us, as set forth above, remains at \$75,000,000 and after deducting the commissions and estimated offering expenses payable by us. The information discussed above is illustrative only and will adjust based on the actual public offering price, the actual number of shares that we offer in this offering, and other terms of this offering determined at the time of each offer and sale.

The number of our shares of common stock outstanding is based on 19,931,660 shares of common stock outstanding as of December 31, 2020, and excludes the following, all as of December 31, 2020:

- 1,898,395 shares of our common stock issuable upon the exercise of stock options outstanding as of December 31, 2020, under our 2019 Equity Incentive Plan (as amended and restated, the “2019 Plan”) at a weighted-average exercise price of \$12.79 per share;
- 538,613 shares of our common stock issuable upon the exercise of stock options granted subsequent to December 31, 2020, under the 2019 Plan at a weighted-average exercise price of \$23.04 per share;
- 25,000 shares of our common stock issuable upon exercise of an outstanding warrant at an exercise price of \$22.06 per share (which expires on June 30, 2025);

[Table of Contents](#)

- 1,433,991 shares of our common stock reserved for future issuance under our 2019 Plan, as well as any automatic increase in the number of shares of common stock reserved for future issuance thereunder; and
- 355,806 shares of our common stock reserved for future issuance under our 2019 Employee Stock Purchase Plan, as well as any automatic increase in the number of shares of common stock reserved for future issuance thereunder.

To the extent that options outstanding as of December 31, 2020, have been or are exercised, or other shares are issued, investors purchasing shares in this offering could experience further dilution. In addition, we may choose to raise additional capital due to market conditions or strategic considerations, even if we believe we have sufficient funds for our current or future operating plans. To the extent that additional capital is raised through the sale of equity or convertible debt securities, the issuance of these securities could result in further dilution to our stockholders.

PLAN OF DISTRIBUTION

We entered into a sales agreement with SVB Leerink LLC and Cantor Fitzgerald & Co., under which we may offer and sale from time to time up to an aggregate of \$75,000,000 of shares of our common stock. Sales of our common stock, if any, will be made at market prices by any method that is deemed to be an “at the market offering” as defined in Rule 415(a)(4) under the Securities Act, including sales made directly on the Nasdaq Global Market or any other trading market for our common stock. The sales agreement has been filed as an exhibit to our Registration Statement on Form S-3 of which this prospectus supplement forms a part.

The below description of the material provisions of the sales agreement does not purport to be a complete statement of its terms and conditions. A copy of the sales agreement is filed as an exhibit to the registration statement of which this prospectus supplement forms a part.

The Sales Agents will offer our common stock subject to the terms and conditions of the sales agreement on a daily basis or as otherwise agreed upon by us and the Sales Agents. We will designate the maximum amount of common stock to be sold through the Sales Agents on a daily basis or otherwise determine such maximum amount together with the Sales Agents. Subject to the terms and conditions of the sales agreement, the Sales Agents will use their commercially reasonable efforts to sell on our behalf all of the shares of common stock requested to be sold by us. We may instruct the Sales Agents not to sell common stock if the sales cannot be effected at or above the price designated by us in any such instruction. The Sales Agents or we may suspend the offering of our common stock being made through the Sales Agents under the sales agreement upon proper notice to the other party. The Sales Agents and we each have the right, by giving written notice as specified in the sales agreement, to terminate the sales agreement in each party’s sole discretion at any time.

The aggregate compensation payable to the Sales Agents is equal to 3.0% of the aggregate gross sales price of the shares sold through it pursuant to the sales agreement. We have also agreed to reimburse the Sales Agents up to an aggregate of \$50,000 of the Sales Agents’ actual outside legal expenses incurred by the Sales Agents in connection with this offering and certain ongoing expenses. We estimate that the total expenses of the offering payable by us, excluding commissions payable to the Sales Agents under the sales agreement, will be approximately \$350,000.

The remaining sales proceeds, after deducting any expenses payable by us and any transaction fees imposed by any governmental, regulatory, or self-regulatory organization in connection with the sales, will equal our net proceeds for the sale of such common stock.

A Sales Agent will provide written confirmation to us following the close of trading on The Nasdaq Global Market on each day in which common stock is sold through it as sales agent under the sales agreement. Each confirmation will include the number of shares of common stock sold through it as sales agent on that day, the volume weighted average price of the shares sold, the percentage of the daily trading volume and the net proceeds to us.

We will report at least quarterly the number of shares of common stock sold through the Sales Agents under the sales agreement, the net proceeds to us and the compensation paid by us to the Sales Agents in connection with the sales of common stock.

Settlement for sales of common stock will occur on the second business day that is also a trading day following the date on which any sales were made in return for payment of the net proceeds to us. There is no arrangement for funds to be received in an escrow, trust or similar arrangement.

In connection with the sales of our common stock on our behalf, the Sales Agents will each be deemed to be an “underwriter” within the meaning of the Securities Act and the compensation paid to the Sales Agents will be deemed to be underwriting commissions or discounts. We have agreed in the sales agreement to provide indemnification and contribution to the Sales Agents against certain liabilities, including liabilities under the Securities Act. As Sales Agents, SVB Leerink and Cantor will not engage in any transactions that stabilize our common stock.

[Table of Contents](#)

Our common stock is listed on the Nasdaq Global Market and trades under the symbol “ETNB.” The transfer agent of our common stock is currently American Stock Transfer and Trust Company, LLC.

The Sales Agents and/or their affiliates have provided, and may in the future provide, various investment banking and other financial services for us for which services they have received and, may in the future receive, customary fees.

LEGAL MATTERS

The validity of the shares of common stock offered hereby will be passed upon for us by Gibson, Dunn & Crutcher LLP, SVB Leerink LLC and Cantor Fitzgerald & Co. are being represented in this offering by Cooley LLP, New York, New York.

EXPERTS

The consolidated financial statements of 89bio, Inc. as of December 31, 2020, and for the year then ended, have been incorporated by reference herein and in the registration statement in reliance upon the report of KPMG LLP, independent registered public accounting firm, incorporated by reference herein, and upon the authority of said firm as experts in accounting and auditing.

The December 31, 2019 consolidated financial statements, incorporated in this prospectus supplement by reference from the Company's Annual Report on Form 10-K for the year ended December 31, 2019, have been audited by Deloitte & Touche LLP, an independent registered public accounting firm, as stated in their report, which is incorporated herein by reference. Such consolidated financial statements have been so incorporated in reliance upon the report of such firm given upon their authority as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

This prospectus supplement is part of the registration statement on Form S-3 we filed with the SEC under the Securities Act and does not contain all the information set forth in the registration statement. Whenever a reference is made in this prospectus supplement to any of our contracts, agreements or other documents, the reference may not be complete and you should refer to the exhibits that are a part of the registration statement or the exhibits to the reports or other documents incorporated by reference into this prospectus supplement for a copy of such contract, agreement or other document. Because we are subject to the information and reporting requirements of the Exchange Act, we file annual, quarterly and current reports, proxy statements and other information with the SEC. Our SEC filings are available to the public over the Internet at the SEC's website at www.sec.gov.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to incorporate by reference information from other documents that we file with it, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is considered to be part of this prospectus supplement and the accompanying prospectus. Information in this prospectus supplement and the accompanying prospectus supersedes information incorporated by reference that we filed with the SEC prior to the date of this prospectus, while information that we file later with the SEC will automatically update and supersede the information in this prospectus. We incorporate by reference into this prospectus supplement and the registration statement of which this prospectus supplement is a part the information or documents listed below that we have filed with the SEC:

- our Annual Report on [Form 10-K](#), for the year ended December 31, 2020, filed with the SEC on March 25, 2021; and
- the description of our common stock set forth in our registration statement on [Form 8-A](#), filed with the SEC on November 1, 2019, including any amendment or report filed for the purpose of updating such description.

We also incorporate by reference any future filings (other than current reports furnished under Item 2.02 or Item 7.01 of Form 8-K and exhibits filed on such form that are related to such items unless such Form 8-K expressly provides to the contrary) made with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act, including those made after the date of the initial filing of the registration statement of which this prospectus supplement is a part and prior to effectiveness of such registration statement, until we file a post-effective amendment that indicates the termination of the offering of the securities made by this prospectus, which will become a part of this prospectus from the date that such documents are filed with the SEC. Information in such future filings updates and supplements the information provided in this prospectus. Any statements in any such future filings will automatically be deemed to modify and supersede any information in any document we previously filed with the SEC that is incorporated or deemed to be incorporated herein by reference to the extent that statements in the later-filed document modify or replace such earlier statements. We will furnish without charge to each person, including any beneficial owner, to whom a prospectus is delivered, upon written or oral request, a copy of any or all of the documents incorporated by reference into this prospectus but not delivered with the prospectus, including exhibits that are specifically incorporated by reference into such documents. You should direct any requests for documents to:

89bio, Inc.
142 Sansome Street, 2nd Floor
San Francisco, California 94104
(415) 500-4614



Up to \$75,000,000

Common Stock

PROSPECTUS SUPPLEMENT

SVB Leerink

Cantor

, 2021

PART II**INFORMATION NOT REQUIRED IN THE PROSPECTUS****Item 14. Other Expenses of Issuance and Distribution**

The following table sets forth an estimate of the fees and expenses, other than the underwriting discounts and commissions, payable by the registrant in connection with the issuance and distribution of the securities being registered. All the amounts shown are estimates, except for the SEC registration fee and FINRA filing fee.

	<u>Amount</u>
SEC registration fee	\$27,275
FINRA filing fee	38,000
Printing and engraving expenses	*
Legal fees and expenses	*
Accounting fees and expenses	*
Transfer agent and registrar fees and expenses	*
Miscellaneous fees and expenses	*
Total	\$ *

* These fees are calculated based on the securities offered and the number of issuances and accordingly cannot be estimated at this time.

Item 15. Indemnification of Directors and Officers

The company is a Delaware corporation. Section 145(a) of the Delaware General Corporation Law (the "DGCL") provides that a Delaware corporation may indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative, other than an action by or in the right of the corporation, by reason of the fact that such person is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by the person in connection with such action, suit or proceeding if the person acted in good faith and in a manner the person reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to any criminal action or proceeding, had no reasonable cause to believe his or her conduct was unlawful.

Section 145(b) of the DGCL provides that a Delaware corporation may indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action or suit by or in the right of the corporation to procure a judgment in its favor by reason of the fact that such person acted in any of the capacities set forth above, against expenses (including attorneys' fees) actually and reasonably incurred by such person in connection with the defense or settlement of such action or suit if the person acted in good faith and in a manner the person reasonably believed to be in, or not opposed to, the best interests of the corporation, except that no indemnification shall be made in respect of any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation, unless and only to the extent that the Court of Chancery or the court in which such action or suit was brought shall determine, upon application, that, despite the adjudication of liability but in view of all the circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expenses which the court shall deem proper.

Further subsections of DGCL Section 145 provide that:

- (1) to the extent a present or former director or officer of a corporation has been successful on the merits or otherwise in the defense of any action, suit or proceeding referred to in subsections (i) and (ii) of

Table of Contents

Section 145 or in the defense of any claim, issue or matter therein, such person shall be indemnified against expenses, including attorneys' fees, actually and reasonably incurred by such person in connection therewith;

- (2) the indemnification and advancement of expenses provided for pursuant to Section 145 shall not be deemed exclusive of any other rights to which those seeking indemnification or advancement of expenses may be entitled under any bylaw, agreement, vote of shareholders or disinterested directors or otherwise; and
- (3) the corporation shall have the power to purchase and maintain insurance of behalf of any person who is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, against any liability asserted against such person and incurred by such person in any such capacity, or arising out of such person's status as such, whether or not the corporation would have the power to indemnify such person against such liability under Section 145.

As used in this Item 14, the term "proceeding" means any threatened, pending or completed action, suit or proceeding, whether or not by or in the right of the company, and whether civil, criminal, administrative, investigative or otherwise.

Section 145 of the DGCL makes provision for the indemnification of officers and directors in terms sufficiently broad to indemnify officers and directors of the company under certain circumstances from liabilities (including reimbursement for expenses incurred) arising under the Securities Act of 1933. The company's Second Amended and Restated Certificate of Incorporation and Second Amended and Restated Bylaws provide, in effect, that, to the fullest extent and under the circumstances permitted by Section 145 of the DGCL, the company will indemnify any and all of its officers and directors. The company has entered into indemnification agreements with its officers and directors. The company may, in its discretion, similarly indemnify its employees and agents. The company's Second Amended and Restated Certificate of Incorporation also relieves the company's directors from monetary damages to the company or its shareholders for breach of such director's fiduciary duty as a director to the fullest extent permitted by the DGCL. Under Section 102(b)(7) of the DGCL, a corporation may relieve its directors from personal liability to such corporation or its shareholders for monetary damages for any breach of their fiduciary duty as directors except (i) for a breach of the duty of loyalty, (ii) for failure to act in good faith, (iii) for intentional misconduct or knowing violation of law, (iv) for willful or negligent violations of certain provisions in the DGCL imposing certain requirements with respect to stock repurchases, redemptions and dividends or (v) for any transactions from which the director derived an improper personal benefit.

The company has purchased insurance policies that, within the limits and subject to the terms and conditions thereof, cover certain expenses and liabilities that may be incurred by directors and officers in connection with proceedings that may be brought against them as a result of an act or omission committed or suffered while acting as a director or officer of the company.

The form of Underwriting Agreement, to be entered into in connection with this offering and to be attached as Exhibit 1.1 hereto, provides for the indemnification by the underwriters of us and our officers and directors for certain liabilities, including liabilities arising under the Securities Act, and affords certain rights of contribution with respect thereto.

Table of Contents

Item 16. Exhibits

A list of exhibits filed with this registration statement on Form S-3 is set forth on the Exhibit Index and is incorporated herein by reference.

Exhibit No.	Description
1.1*	Form of Underwriting Agreement.
1.2	Sales Agreement, by and among the Company, SVB Leerink LLC and Cantor Fitzgerald & Co., dated March 25, 2021.
3.1	Second Amended and Restated Certificate of Incorporation of the Company (incorporated by reference to Exhibit 3.1 to the Company's Form 8-K filed on November 15, 2019).
3.2	Second Amended and Restated Bylaws of the Company (incorporated by reference to Exhibit 3.2 to the Company's Form 8-K filed on November 15, 2019).
4.1	Specimen common stock certificate of the Company (incorporated by reference to Exhibit 4.1 to the Company's Form S-1/A filed on October 28, 2019).
4.2	Investors' Rights Agreement, dated as of September 17, 2019, by and among the Company and certain of its shareholders (incorporated by reference to Exhibit 4.2 to the Company's Form S-1 filed on October 11, 2019).
4.3	Form of Warrant to Purchase Common Stock for Silicon Valley Bank (incorporated by reference to Exhibit 4.1 to the Company's Form 8-K filed on April 13, 2020).
4.4	Form of Debt Indenture.
4.5*	Form of Debt Securities.
4.6*	Form of Warrant Agreement and Warrant Certificate.
4.7*	Form of Unit Agreement and Unit Certificate.
5.1	Opinion of Gibson, Dunn & Crutcher LLP, relating to base prospectus.
5.2	Opinion of Gibson, Dunn & Crutcher LLP, relating to sales agreement prospectus supplement.
23.1	Consent of KPMG LLP, Independent Registered Public Accounting Firm.
23.2	Consent of Deloitte & Touche LLP, Independent Registered Public Accounting Firm.
23.3	Consent of Gibson, Dunn & Crutcher LLP (included in Exhibit 5.1 hereto).
24.1	Power of Attorney (included on the signature pages to the registration statement).
25.1**	Statement of Eligibility of Trustee under the Indenture.

* To be filed, if necessary, by amendment or as an exhibit to a document to be incorporated or deemed to be incorporated by reference in this registration statement, including a Current Report on Form 8-K.

** To be filed in accordance with the requirements of Section 305(b)(2) of the Trust Indenture Act of 1939, as amended, and the applicable rules thereunder.

Item 17. Undertakings

The undersigned registrant hereby undertakes:

- (1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:
 - (i) to include any prospectus required by Section 10(a)(3) of the Securities Act of 1933;

Table of Contents

(ii) to reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and

(iii) to include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;

provided, however, that paragraphs (1)(i), (1)(ii) and (1)(iii) do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the registrant pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in the registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of the registration statement.

(2) That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(4) That, for the purpose of determining liability under the Securities Act of 1933 to any purchaser:

(i) Each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and

(ii) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii), or (x) for the purpose of providing the information required by Section 10(a) of the Securities Act of 1933 shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof. *Provided, however,* that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date.

(5) That, for the purpose of determining liability of the registrant under the Securities Act of 1933 to any purchaser in the initial distribution of the securities, the undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

(i) Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;

Table of Contents

(ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;

(iii) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and

(iv) Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.

(6) The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act of 1933, each filing of the registrant's annual report pursuant to section 13(a) or section 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.

(7) That, for purposes of determining any liability under the Securities Act, (i) the information omitted from the form of prospectus filed as part of the registration statement in reliance upon Rule 430A and contained in the form of prospectus filed by the registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act shall be deemed to be a part of the registration statement as of the time it was declared effective; and (ii) each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.

(8) Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act of 1933 and will be governed by the final adjudication of such issue.

(9) To file an application for the purpose of determining the eligibility of the trustee to act under subsection (a) of Section 310 of the Trust Indenture Act in accordance with the rules and regulations prescribed by the Commission under Section 305(b)(2) of the Trust Indenture Act.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of San Francisco, State of California, on March 25, 2021.

89bio, Inc.

By: /s/ Rohan Palekar

Rohan Palekar
Chief Executive Officer

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Rohan Palekar and Ryan Martins, and each of them, as true and lawful attorneys-in-fact and agents, with full powers of substitution and resubstitution, for them and in their name, place and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments) to this registration statement (or any registration statement for the same offering that is to be effective upon filing pursuant to Rule 462(b) under the Securities Act of 1933), and to file the same, with all exhibits thereto, and other documents in connection therewith, with the SEC, and generally to do all such things in their names and behalf in their capacities as officers and directors to enable the 89bio, Inc. to comply with the provisions of the Securities Act of 1933 and all requirements of the SEC, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as he might or could do in person, ratifying and confirming all that said attorneys-in-fact and agents, or any of them, or their or his substitutes or substitute, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed below by the following persons in the capacities and on the dates indicated.

<u>Signatures</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Rohan Palekar</u> Rohan Palekar	Director, Chief Executive Officer (<i>principal executive officer</i>)	March 25, 2021
<u>/s/ Ryan Martins</u> Ryan Martins	Chief Financial Officer (<i>principal financial and accounting officer</i>)	March 25, 2021
<u>/s/ Steven Altschuler</u> Steven Altschuler, M.D.	Chairman	March 25, 2021
<u>/s/ Derek DiRocco</u> Derek DiRocco, Ph.D.	Director	March 25, 2021
<u>/s/ Gregory Grunberg</u> Gregory Grunberg, M.D.	Director	March 25, 2021
<u>/s/ Michael Hayden</u> Michael Hayden, M.B., Ch.B., Ph.D.	Director	March 25, 2021

[Table of Contents](#)

<hr/> <p>/s/ Anat Naschitz Anat Naschitz</p>	Director	March 25, 2021
<hr/> <p>/s/ Lota Zoth Lota Zoth, C.P.A.</p>	Director	March 25, 2021

89bio, Inc.
Shares of Common Stock
(\$0.001 par value per share)

SALES AGREEMENT

March 25, 2021

SVB LEERINK LLC
1301 Avenue of the Americas, 12th Floor
New York, New York 10019

CANTOR FITZGERALD & CO.
499 Park Avenue
New York, New York 10022

Ladies and Gentlemen:

89bio, Inc., a Delaware corporation (the “**Company**”), confirms its agreement (this “**Agreement**”) with SVB Leerink LLC and Cantor Fitzgerald & Co. (collectively the “**Agents**,” and each individually an “**Agent**”), as follows:

1. **Issuance and Sale of Shares.** The Company agrees that, from time to time during the term of this Agreement, on the terms and subject to the conditions set forth herein, it may issue and sell through the Agents up to \$75,000,000 of shares of common stock, \$0.001 par value per share, of the Company (the “**Common Stock**”), subject to the limitations set forth in Section 5(c) (the “**Placement Shares**”). Notwithstanding anything to the contrary contained herein, the parties hereto agree that compliance with the limitation set forth in this Section 1 on the aggregate gross sales price of Placement Shares that may be issued and sold under this Agreement from time to time shall be the sole responsibility of the Company, and that the Agents shall have no obligation in connection with such compliance. The issuance and sale of Placement Shares through the Agents will be effected pursuant to the Registration Statement (as defined below) filed by the Company with the Securities and Exchange Commission (the “**Commission**”) and to be declared effective by the Commission, although nothing in this Agreement shall be construed as requiring the Company to issue any Placement Shares.

The Company has prepared and will file, in accordance with the provisions of the Securities Act of 1933, as amended, and the rules and regulations thereunder (collectively, the “**Securities Act**”), with the Commission a registration statement on Form S-3, including (a) a base prospectus, relating to certain securities, including the Common Stock, to be issued from time to time by the Company, and which incorporates by reference documents that the Company has filed or will file in accordance with the provisions of the Securities Exchange Act of 1934, as amended, and the rules and regulations thereunder (collectively, the “**Exchange Act**”), and (b) a prospectus supplement specifically relating to the Placement Shares to be issued from time to time pursuant to this Agreement (the “**Prospectus Supplement**”) to the base prospectus included as part of such registration statement. The Company will furnish to the Agents, for use by the Agents, copies of the base prospectus included as part of such registration statement at the time it becomes effective, as supplemented by the Prospectus Supplement. Except where the context otherwise requires, such registration statement, including all documents filed as

part thereof or incorporated by reference therein, and including any information contained in a Prospectus (as defined below) subsequently filed with the Commission pursuant to Rule 424(b) under the Securities Act or deemed to be a part of such registration statement pursuant to Rule 430B or Rule 462(b) under the Securities Act, is herein called the “**Registration Statement**.” The base prospectus, including all documents incorporated therein by reference, included in the Registration Statement, as it may be supplemented by the Prospectus Supplement, in the form in which such prospectus and/or Prospectus Supplement have most recently been filed by the Company with the Commission pursuant to Rule 424(b) under the Securities Act, together with any “issuer free writing prospectus” (as used herein, as defined in Rule 433 under the Securities Act (“**Rule 433**”)), relating to the Placement Shares that (i) is required to be filed with the Commission by the Company or (ii) is exempt from filing pursuant to Rule 433(d)(5)(i), 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), is herein called the “**Prospectus**.”

Any reference herein to the Registration Statement, the Prospectus Supplement, the Prospectus or any issuer free writing prospectus shall be deemed to refer to and include the documents, if any, that are or are deemed to be incorporated by reference therein (the “**Incorporated Documents**”), including, unless the context otherwise requires, the documents, if any, filed as exhibits to such Incorporated Documents. Any reference herein to the terms “amend,” “amendment” or “supplement” with respect to the Registration Statement, the Prospectus Supplement, the Prospectus or any issuer free writing prospectus shall be deemed to refer to and include the filing of any document under the Exchange Act on or after the most-recent effective date of the Registration Statement, or the respective dates of the Prospectus Supplement, Prospectus or such issuer free writing prospectus, as the case may be, and incorporated therein by reference. For purposes of this Agreement, all references to the Registration Statement, the Prospectus or any amendment or supplement thereto shall be deemed to include the most recent copy filed with the Commission pursuant to its Electronic Data Gathering Analysis and Retrieval System or, if applicable, the Interactive Data Electronic Application system when used by the Commission (collectively, “**EDGAR**”).

2. **Placements.** Each time that the Company wishes to issue and sell any Placement Shares hereunder (each, a “**Placement**”), it will notify an Agent (the “**Designated Agent**”) by email notice (or other method mutually agreed to in writing by the parties) (each such notice, a “**Placement Notice**”) containing the parameters in accordance with which it desires such Placement Shares to be sold, which at a minimum shall include the maximum number or amount of Placement Shares to be sold, the time period during which sales are requested to be made, any limitation on the number or amount of Placement Shares that may be sold in any one Trading Day (as defined in Section 3) and any minimum price below which sales may not be made, a form of which containing such minimum sales parameters is attached hereto as **Schedule 1**. The Placement Notice must originate from one of the individuals authorized to act on behalf of the Company and set forth on **Schedule 2** (with a copy to each of the other individuals from the Company listed on such **Schedule 2**), and shall be addressed to each of the recipients from the Designated Agent set forth on **Schedule 2**, as such **Schedule 2** may be updated by either party from time to time by sending a written notice containing a revised **Schedule 2** to the other party in the manner provided in Section 12 (including by email correspondence to each of the individuals of the Company set forth on **Schedule 2**, if receipt of such correspondence is actually acknowledged by any of the individuals to whom the notice is sent, other than via auto-reply). The Placement Notice shall be effective upon receipt by the Designated Agent unless and until (i) in accordance with the notice requirements set forth in Section 4, the Designated Agent declines to accept the terms contained therein for any reason, in its sole discretion, within two Trading Days of the date the Designated Agent receives the Placement Notice, (ii) in accordance with the notice requirements set forth in Section 4, the Designated Agent suspends sales under the Placement Notice for any reason in its sole discretion, (iii) the entire amount of the Placement Shares has been sold pursuant to this Agreement, (iv) in accordance with the notice requirements set forth in Section 4, the Company suspends sales under or terminates the Placement Notice for any reason in its

sole discretion, (v) the Company issues a subsequent Placement Notice and explicitly indicates that its parameters supersede those contained in the earlier dated Placement Notice or (vi) this Agreement has been terminated pursuant to the provisions of Section 11. The amount of any discount, commission or other compensation to be paid by the Company to the Designated Agent in connection with the sale of the Placement Shares effected through the Agent shall be calculated in accordance with the terms set forth in **Schedule 3**. It is expressly acknowledged and agreed that neither the Company nor the Agents will have any obligation whatsoever with respect to a Placement or any Placement Shares unless and until the Company delivers a Placement Notice to the Designated Agent and the Designated Agent does not decline such Placement Notice pursuant to the terms set forth above, and then only upon the terms specified therein and herein. In the event of a conflict between the terms of this Agreement and the terms of a Placement Notice, the terms of the Placement Notice will control with respect to the matters covered thereby.

3. **Sale of Placement Shares by the Designated Agent.** On the basis of the representations and warranties herein contained and subject to the terms and conditions herein set forth, including Section 5(c), upon the Designated Agent's acceptance of the terms of a Placement Notice as provided in Section 2, and unless the sale of the Placement Shares described therein has been declined, suspended or otherwise terminated in accordance with the terms of this Agreement, the Designated Agent, for the period specified in the Placement Notice, will use its commercially reasonable efforts consistent with its normal trading and sales practices and applicable state and federal laws, rules and regulations and the rules of the Nasdaq Global Market ("**Nasdaq**") to sell such Placement Shares up to the number or amount specified in, and otherwise in accordance with the terms of, such Placement Notice. The Designated Agent will provide written confirmation to the Company (including by email correspondence to each of the individuals of the Company set forth on **Schedule 2**, if receipt of such correspondence is actually acknowledged by any of the individuals to whom the notice is sent, other than via auto-reply) no later than the opening of the Trading Day (as defined below) immediately following the Trading Day on which it has made sales of Placement Shares hereunder setting forth the number or amount of Placement Shares sold on such Trading Day, the volume-weighted average price of the Placement Shares sold and the Net Proceeds (as defined below) payable to the Company. Unless otherwise specified by the Company in a Placement Notice, the Designated Agent may sell Placement Shares by any method permitted by law deemed to be an "at the market offering" as defined in Rule 415(a)(4) of the Securities Act, including sales made directly on or through Nasdaq, on or through any other existing trading market for the Common Stock or to or through a market maker. If expressly authorized by the Company (including in a Placement Notice), the Designated Agent may also sell Placement Shares in negotiated transactions. Notwithstanding the provisions of Section 6(tt), except as may be otherwise agreed by the Company and the Agents, the Designated Agent shall not purchase Placement Shares on a principal basis pursuant to this Agreement unless the Company and the Agents enter into a separate written agreement setting forth the terms of such sale. The Company acknowledges and agrees that (i) there can be no assurance that the Designated Agent will be successful in selling Placement Shares, (ii) the Designated Agent will incur no liability or obligation to the Company or any other person or entity if it does not sell Placement Shares for any reason other than a failure by the Designated Agent to use its commercially reasonable efforts consistent with its normal trading and sales practices and applicable state and federal laws, rules and regulations and the rules of Nasdaq to sell such Placement Shares as required under this Agreement and (iii) the Designated Agent shall be under no obligation to purchase Placement Shares on a principal basis pursuant to this Agreement unless the Company and the Agent enter into a separate written agreement setting forth the terms of such sale. For the purposes hereof, "**Trading Day**" means any day on which the Common Stock is purchased and sold on Nasdaq.

4. Suspension of Sales.

(a) The Company or the Designated Agent may, upon notice to the other party in writing (including by email correspondence to each of the individuals of the other party set forth on **Schedule 2**, if receipt of such correspondence is actually acknowledged by any of the individuals to whom the notice is sent, other than via auto-reply) or by telephone (confirmed immediately by email correspondence to each of the individuals of the other party set forth on **Schedule 2**), suspend any sale of Placement Shares; *provided, however*, that such suspension shall not affect or impair either party's obligations with respect to any Placement Shares sold hereunder prior to the receipt of such notice. Each of the parties agrees that no such notice under this Section 4 shall be effective against the other party unless notice is sent by one of the individuals named on **Schedule 2** hereto to the other party in writing (including by email correspondence to each of the individuals of the other party set forth on **Schedule 2**, if receipt of such correspondence is actually acknowledged by any of the individuals to whom the notice is sent, other than via auto-reply).

(b) Notwithstanding any other provision of this Agreement, during any period in which the Company is, or could be deemed to be, in possession of material non-public information, the Company and the Agents agree that (i) no sale of Placement Shares will take place, (ii) the Company shall not request the sale of any Placement Shares and shall cancel any effective Placement Notices instructing the Agents to make any sales and (iii) the Agents shall not be obligated to sell or offer to sell any Placement Shares.

5. Settlement and Delivery of the Placement Shares.

(a) Settlement of Placement Shares. Unless otherwise specified in the applicable Placement Notice, settlement for sales of Placement Shares will occur on the second Trading Day (or such earlier day as is industry practice or as is required for regular-way trading) following the date on which such sales are made (each, a "**Settlement Date**"). The amount of proceeds to be delivered to the Company on a Settlement Date against receipt of the Placement Shares sold (the "**Net Proceeds**") will be equal to the aggregate gross sales price received by the Agent at which such Placement Shares were sold, after deduction of (i) the Agent's commission, discount or other compensation for such sales payable by the Company pursuant to Section 2 hereof, (ii) any other amounts due and payable by the Company to the Agent hereunder pursuant to Section 7(g) hereof and (iii) any transaction fees imposed by any governmental or self-regulatory organization in respect of such sales.

(b) Delivery of Placement Shares. On or before each Settlement Date, the Company will issue the Placement Shares being sold on such date and will, or will cause its transfer agent to, electronically transfer such Placement Shares by crediting the Designated Agent's or its designee's account (provided the Designated Agent shall have given the Company written notice of such designee prior to the Settlement Date) at The Depository Trust Company through its Deposit and Withdrawal at Custodian System ("**DWAC**") or by such other means of delivery as may be mutually agreed upon by the parties hereto, which in all cases shall be duly authorized, freely tradeable, transferable, registered shares of Common Stock in good deliverable form. On each Settlement Date, the Designated Agent will deliver the related Net Proceeds in same day funds to an account designated by the Company on or prior to the Settlement Date. The Designated Agent shall be responsible for providing DWAC instructions or other instructions for delivery by other means with regard to the transfer of the Placement Shares being sold. In addition to and in no way limiting the rights and obligations set forth in Section 9(a) hereto, the Company agrees that if the Company or its transfer agent (if applicable), defaults in its obligation to deliver duly authorized, freely tradeable, transferable, registered Placement Shares in good deliverable form by 2:30 P.M., New York City time, on a Settlement Date (other than as a result of a failure by the Agent to provide instructions for delivery), the Company will (i) take all necessary action to cause the full amount of any Net Proceeds that were delivered to the Company's account with respect to such settlement, together with any costs incurred by the Designated Agent and/or its clearing firm in connection with recovering such Net Proceeds, to be immediately returned to the Designated Agent or its clearing firm no later than 5:00 P.M., New York City time, on such Settlement Date, by wire transfer of immediately available funds to an

account designated by the Agent or its clearing firm, (ii) indemnify and hold the Designated Agent and its clearing firm harmless against any loss, claim, damage, or expense (including reasonable legal fees and expenses), as incurred, arising out of or in connection with such default by the Company or its transfer agent (if applicable) and (iii) pay to the Designated Agent any commission, discount or other compensation to which it would otherwise have been entitled absent such default. Certificates for the Placement Shares, if any, shall be in such denominations and registered in such names as the Designated Agent may request in writing one Business Day (as defined below) before the applicable Settlement Date. Certificates for the Placement Shares, if any, will be made available by the Company for examination and packaging by the Designated Agent in New York City not later than 12:00 P.M., New York City time, on the Business Day prior to the applicable Settlement Date.

(c) Limitations on Offering Size. Under no circumstances shall the Company cause or request the offer or sale of any Placement Shares if, after giving effect to the sale of such Placement Shares, the aggregate number or gross sales proceeds of Placement Shares sold pursuant to this Agreement would exceed the lesser of: (i) the number or dollar amount of shares of Common Stock registered pursuant to, and available for offer and sale under, the Registration Statement pursuant to which the offering of Placement Shares is being made, (ii) the number of authorized but unissued shares of Common Stock of the Company (less shares of Common Stock issuable upon exercise, conversion or exchange of any outstanding securities of the Company or otherwise reserved from the Company's authorized capital stock), (iii) the number or dollar amount of shares of Common Stock permitted to be offered and sold by the Company under Form S-3 (including General Instruction I.B.6. thereof, if such instruction is applicable), (iv) the number or dollar amount of shares of Common Stock that the Company's board of directors or a duly authorized committee thereof is authorized to issue and sell from time to time, and notified to the Agent in writing, or (v) the dollar amount of shares of Common Stock for which the Company has filed the Prospectus Supplement. Under no circumstances shall the Company cause or request the offer or sale of any Placement Shares pursuant to this Agreement at a price lower than the minimum price authorized from time to time by the Company's board of directors or a duly authorized committee thereof, and notified to the Designated Agent in writing. Notwithstanding anything to the contrary contained herein, the parties hereto acknowledge and agree that compliance with the limitations set forth in this Section 5(c) on the number or dollar amount of Placement Shares that may be issued and sold under this Agreement from time to time shall be the sole responsibility of the Company, and that the Agents shall have no obligation in connection with such compliance.

(d) Sales Through Agents. With respect to the offering and sale of Placement Shares pursuant to this Agreement, the Company agrees that any offer to sell Placement Shares, any solicitation of an offer to buy Placement Shares, and any sales of Placement Shares shall only be effected by or through a single Agent on any single given day, and the Company shall in no event request that more than one Agent offer or sell Placement Shares pursuant to this Agreement on the same day.

6. Representations and Warranties of the Company. The Company represents and warrants to, and agrees with, the Agents that as of the date of this Agreement, and as of (i) each Representation Date (as defined in Section 7(m)), (ii) each date on which a Placement Notice is given, (iii) the date and time of each sale of any Placement Shares pursuant to this Agreement and (iv) each Settlement Date (each such time or date referred to in clauses (i) through (iv), an "**Applicable Time**"):

(a) The Company and the transactions contemplated by this Agreement meet the requirements for and comply with the conditions for the use of Form S-3 (including General Instructions I.A and I.B.1.) under the Securities Act. The Registration Statement has been filed with the Commission and will be declared effective by the Commission under the Securities Act prior to the issuance of any Placement Notices by the Company. At the time the Registration Statement originally became effective and at the time the Company's most recently filed Annual Report on Form 10-K for the year ended

December 31, 2020, was filed with the Commission, the Company met the then-applicable requirements for use of Form S-3 (including General Instructions I.A and I.B.1.) under the Securities Act. The Registration Statement meets, and the offering and sale of Placement Shares as contemplated hereby comply with, the requirements of Rule 415(a)(1)(x) under the Securities Act. The Agents are named as the agents engaged by the Company in the section entitled "Plan of Distribution" in the Prospectus Supplement. The Company has not received, and has no notice from the Commission of, any notice pursuant to Rule 401(g)(1) under the Securities Act objecting to the use of the shelf registration statement form. No stop order of the Commission preventing or suspending the use of the base prospectus, the Prospectus Supplement or the Prospectus, or the effectiveness of the Registration Statement, has been issued, and no proceedings for such purpose are pending before or, to the knowledge of the Company, threatened by the Commission. At the time of the initial filing of the Registration Statement, the Company paid the required Commission filing fees relating to the securities covered by the Registration Statement, including the Shares that may be sold pursuant to this Agreement, in accordance with Rule 457(o) under the Securities Act. Copies of the Registration Statement, the Prospectus, any such amendments or supplements to any of the foregoing and all Incorporated Documents that were filed with the Commission on or prior to the date of this Agreement have been delivered, or are available through EDGAR, to the Agents and their counsel.

(b) Each of the Registration Statement and any post-effective amendment thereto, at the time it became or becomes effective, at each deemed effective date with respect to the Agents pursuant to Rule 430B(f)(2) under the Securities Act and as of each Applicable Time, complied, complies and will comply in all material respects with the requirements of the Securities Act and did not, does not and will not contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading, except that the representations and warranties set forth in this sentence do not apply to Agent's Information (as defined below). The Prospectus and any amendment or supplement thereto, when so filed with the Commission under Rule 424(b) under the Securities Act, complied, complies and as of each Applicable Time will comply in all material respects with the requirements of the Securities Act, and each Prospectus Supplement, Prospectus or issuer free writing prospectus (or any amendments or supplements to any of the foregoing) furnished to the Agents for use in connection with the offering of the Placement Shares was identical to the electronically transmitted copies thereof filed with the Commission pursuant to EDGAR, except to the extent permitted by Regulation S-T. Neither the Prospectus nor any amendment or supplement thereto, as of its date and as of each Applicable Time, 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, except that the representations and warranties set forth in this sentence do not apply to Agent's Information. Each Incorporated Document heretofore filed, when it was filed (or, if any amendment with respect to any such document was filed, when such amendment was filed), conformed in all material respects with the requirements of the Exchange Act and were filed on a timely basis with the Commission, and any further Incorporated Documents so filed and incorporated after the date of this Agreement will be filed on a timely basis and, when so filed, will conform in all material respects with the requirements of the Exchange Act; no such Incorporated Document when it was filed (or, if an amendment with respect to any such document was filed, when such amendment was filed), contained an untrue statement of a material fact or omitted to state a material fact required to be stated therein or necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading; and no such Incorporated Document, when it is filed, will contain an untrue statement of a material fact or will omit to state a material fact required to be stated therein or necessary in order to make the statements therein, in light of the circumstances under which they were made, not misleading.

(c) (i) At the time of filing the Registration Statement and (ii) at the time of the execution of this Agreement (with such date being used as the determination date for purposes of this clause (ii)), 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.

(d) From the time of the initial confidential submission of the Company’s initial Registration Statement on Form S-1 through the date hereof, the Company has been and is an “emerging growth company,” as defined in Section 2(a) of the Securities Act (an “**Emerging Growth Company**”).

(e) Each issuer free writing prospectus, as of its issue date and as of each Applicable Time, did not, does not and will not include any information that conflicted, conflicts or will conflict with the information contained in the Registration Statement or the Prospectus, including any Incorporated Document deemed to be a part thereof that has not been superseded or modified. Each issuer free writing prospectus that the Company has filed, or is required to file, pursuant to Rule 433 or that was prepared by or on behalf of or used by the Company complies or will comply in all material respects with the requirements of the Securities Act.

(f) The Company has not distributed and, prior to the later to occur of each Settlement Date and completion of the Designated Agent’s distribution of the Placement Shares under this Agreement, will not distribute any offering material in connection with the offering and sale of the Placement Shares other than the Registration Statement, the Prospectus or any Permitted Free Writing Prospectus (as defined below).

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

(h) The accountants who certified the financial statements included in the Registration Statement and the Prospectus are independent public accountants with respect to the Company as required by the 1933 Act, the 1933 Act Regulations and the Public Company Accounting Oversight Board.

(i) The financial statements included or incorporated by reference in the Registration Statement, and the Prospectus, together with the related notes, present fairly in all material respects the financial position of the Company and its consolidated Subsidiaries at the dates indicated and the statements of operations and comprehensive loss, convertible preferred shares and shareholders’ deficit and cash flows of the Company and its consolidated Subsidiaries 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 except, in the case of unaudited interim financial statements, subject to normal year-end audit adjustments and the exclusion of certain footnotes as permitted by the applicable rules of the Commission. The selected financial data and the summary financial information included in the Registration Statement 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. Except as included therein, no historical or pro forma financial statements or supporting schedules are required to be included in the Registration Statement or the Prospectus under the 1933 Act or the 1933 Act Regulations. The interactive data in eXtensible Business Reporting Language included or incorporated by reference in the Registration Statement and the Prospectus fairly presents the information called for in all material respects and has been prepared in accordance with the Commission’s rules and guidelines applicable thereto.

(j) Except as otherwise stated therein, since the respective dates as of which information is given in the Registration Statement 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 and its Subsidiaries considered as one enterprise, whether or not arising in the ordinary course of business (a “Material Adverse Effect”), (B) there have been no transactions entered into by the Company or any of its Subsidiaries, other than those in the ordinary course of business, which are material with respect to the Company and its Subsidiaries considered as one enterprise, and (C) there has been no dividend or distribution of any kind declared, paid or made by the Company on any class of its capital stock.

(k) 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 corporate power and authority to own, lease and operate its properties and to conduct its business as described in the Registration Statement and the Prospectus and to enter into and perform its obligations under this Agreement; and the Company is duly qualified as a foreign corporation to transact business and is in good standing in each other jurisdiction (or such equivalent concept to the extent it exists under the laws of such 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 result in a Material Adverse Effect.

(l) Each “significant subsidiary” of the Company (as such term is defined in Rule 1-02 of Regulation S-X) (each, a “Subsidiary” and, collectively, the “Subsidiaries”) has been duly organized and is validly existing in good standing under the laws of the jurisdiction of its incorporation or organization (or such equivalent concept to the extent it exists under the laws of such jurisdiction), has corporate or similar power and authority to own, lease and operate its properties and to conduct its business as described in the Registration Statement and the Prospectus and is duly qualified to transact business and is in good standing in each jurisdiction in which such qualification is required (or such equivalent concept to the extent it exists under the laws of such jurisdiction), whether by reason of the ownership or leasing of property or the conduct of business, except where the failure to so qualify or to be in good standing would not result in a Material Adverse Effect. Except as otherwise disclosed in the Registration Statement and the Prospectus, all of the issued and outstanding capital stock of each Subsidiary has been duly authorized and validly issued, is fully paid and non-assessable (or such equivalent concept to the extent it exists under the laws of such jurisdiction) and is owned by the Company, directly or through Subsidiaries, free and clear of any security interest, mortgage, pledge, lien, encumbrance, claim or equity. None of the outstanding shares of capital stock of any Subsidiary were issued in violation of the preemptive or similar rights of any securityholder of such Subsidiary. The only Subsidiaries of the Company are (A) the Subsidiaries listed on Exhibit 21 to the Company’s most recent Annual Report on Form 10-K.

(m) 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 or equity incentive plans referred to in the Registration Statement and the Prospectus, pursuant to the exercise of convertible securities or options referred to in the Registration Statement 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.

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

(o) The Placement Shares have been duly authorized for issuance and sale pursuant to this Agreement and, when issued and delivered by the Company pursuant to this Agreement against payment

of the consideration set forth herein, will be validly issued and fully paid and non-assessable; and the issuance of the Placement Shares is not subject to the preemptive or other similar rights of any securityholder of the Company except as have been duly and validly waived in writing as of the date of this Agreement. The Common Stock conforms in all material respects to all statements relating thereto contained in the Registration Statement and the Prospectus and such description conforms in all material respects to the rights set forth in the instruments defining the same. No holder of Placement Shares will be subject to personal liability by reason of being such a holder.

(p) 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 and the Prospectus and have been waived.

(q) Neither the Company nor any of its Subsidiaries is (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 or any of its Subsidiaries is a party or by which it or any of them may be bound or to which any of the properties or assets of the Company or any Subsidiary is subject (collectively, “**Agreements and Instruments**”), except for such defaults that would not reasonably be expected to, 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 or other authority, body or agency having jurisdiction over the Company or any of its Subsidiaries or any of their respective properties, assets or operations (each, a “**Governmental Entity**”), except for such violations that would not reasonably be expected to, 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 and the Prospectus (including the issuance and sale of the Securities and the use of the proceeds from the sale of the Securities as described therein under the caption “**Use of Proceeds**”) and compliance by the Company with its obligations hereunder have been duly authorized by all necessary corporate 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 or assets of the Company or any Subsidiary 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 (x) the provisions of the charter, by-laws or similar organizational document of the Company or any of its Subsidiaries or (y) any law, statute, rule, regulation, judgment, order, writ or decree of any Governmental Entity, except with respect to clause (y), such violations as would not reasonably be expected to, singly or in the aggregate, result in a Material Adverse Effect. As used herein, a “**Repayment Event**” means any event or condition which gives the holder of any note, debenture or other evidence of indebtedness (or any person acting on such holder’s behalf) the right to require the repurchase, redemption or repayment of all or a portion of such indebtedness by the Company or any of its Subsidiaries.

(r) No labor dispute with the employees of the Company or any of its Subsidiaries 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 or any Subsidiary’s principal suppliers, manufacturers, partners, collaborators, customers or contractors, which, in either case, would result in a Material Adverse Effect.

(s) 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 or any of its Subsidiaries, which would reasonably be expected to result in a Material Adverse Effect, or which would reasonably be expected to materially and adversely affect their respective properties or assets or the consummation of the transactions contemplated in this Agreement or the performance by the Company of its obligations hereunder; and the aggregate of all pending legal or governmental proceedings to which the Company or any such Subsidiary is a party or of which any of their respective properties or assets is the subject which are not described in the Registration Statement and the Prospectus, including ordinary routine litigation incidental to the business, would not reasonably be expected to result in a Material Adverse Effect.

(t) There are no contracts or documents which are required under the 1933 Act or the 1933 Act Regulations to be described in the Registration Statement or the Prospectus or to be filed as exhibits to the Registration Statement which have not been so described and filed as required.

(u) No filing with, or authorization, approval, consent, license, order, registration, qualification or decree of, any Governmental Entity is necessary or required for the performance by the Company of its obligations hereunder, in connection with the offering, issuance or sale of the Securities hereunder or the consummation of the transactions contemplated by this Agreement, except (A) such as have been already obtained or as may be required under the 1933 Act, the 1933 Act Regulations, the rules of The Nasdaq Global Market, state securities laws or Rule 5110 of the Financial Industry Regulatory Authority, Inc. ("FINRA"); or (B) such as which the failure to obtain would not, singly or in the aggregate, impair the power or ability of the Company to perform its obligations under this Agreement or consummate the transactions contemplated hereby.

(v) The Company and its Subsidiaries possess such permits, licenses, approvals, consents, exemptions and other authorizations (collectively, "Governmental Licenses") issued by the appropriate Governmental Entities necessary to conduct the business now operated by them, except where the failure so to possess would not, singly or in the aggregate, reasonably be expected to result in a Material Adverse Effect. The Company and its Subsidiaries are in compliance with the terms and conditions of all Governmental Licenses, except where the failure so to comply would not reasonably be expected to, singly or in the aggregate, result in a Material Adverse Effect. The Company has fulfilled and performed all of its material obligations with respect to the Governmental Licenses and no event has occurred which allows, or after notice or lapse of time would allow, revocation or termination thereof or results in any other material impairment of the rights of the Company as a holder of any permit, except where the failure to so fulfill or perform, or the occurrence of such event, 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 when 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, reasonably be expected to, result in a Material Adverse Effect. Neither the Company nor any of its Subsidiaries has received any notice of proceedings relating to the revocation or modification of, or non-compliance with, any Governmental Licenses which, singly or in the aggregate, if the subject of an unfavorable decision, ruling or finding, would reasonably be expected to result in a Material Adverse Effect.

(w) The Company and its Subsidiaries have good and marketable title to all real property owned by them and good title to all other properties owned by them, in each case, free and clear of all mortgages, pledges, liens, security interests, claims, restrictions or encumbrances of any kind except such as (A) are described in the Registration Statement and the Prospectus or (B) do not, singly or in the

aggregate, materially and adversely affect the value of such property and do not materially interfere with the use made and proposed to be made of such property by the Company or any of its Subsidiaries; and all of the leases and subleases material to the business of the Company and its Subsidiaries, considered as one enterprise, and under which the Company or any of its Subsidiaries holds properties described in the Registration Statement or the Prospectus, are in full force and effect, except to the extent that any such failure to be in full force and effect would not, singly or in the aggregate, result in a Material Adverse Effect, and neither the Company nor any such Subsidiary has any notice of any material claim of any sort that has been asserted by anyone adverse to the rights of the Company or any Subsidiary under any of the leases or subleases mentioned above, or affecting or questioning the rights of the Company or such Subsidiary to the continued possession of the leased or subleased premises under any such lease or sublease.

(x) The Company and its Subsidiaries own, or have obtained adequate rights and licenses under, or can acquire rights on reasonable terms to, all patents, patent rights, patent applications, inventions, copyrights, other works of authorship, know how (including trade secrets and other proprietary or confidential information, systems or procedures), trademarks, service marks, trade names, trade and service mark registrations, trade names, designs, processes, licenses, computer programs, technical data and information, and other intellectual property (collectively, "Intellectual Property") that are necessary to carry on the business of the Company as currently conducted and to commercialize the products or services as disclosed in the Registration Statement and the Prospectus as under development (all such Intellectual Property is collectively referred to as the "**Company Intellectual Property**"). Except as disclosed in the Registration Statement and the Prospectus: (A) to the Company's knowledge there are no third parties who have rights to any Intellectual Property, including no liens, security interest, or other encumbrances, except for customary reversionary rights of third-party licensors with respect to Intellectual Property that is disclosed in the Registration Statement and the Prospectus as licensed to the Company or one or more of its Subsidiaries; (B) the Company has taken reasonable steps to secure its interests in the Intellectual Property owned by the Company from its employees and contractors; (C) to the Company's knowledge, there is no infringement, misappropriation or violation by third parties of any Company Intellectual Property owned by, or exclusively licensed to, the Company or its Subsidiaries; (D) to the Company's knowledge, the Company is not infringing the intellectual property rights of third parties and (E) none of the Company Intellectual Property owned by the Company or, to the Company's knowledge, exclusively licensed to the Company has been adjudged invalid or unenforceable in whole or in part, in the case of clause (C) and clause (D), which infringement, misappropriation or violation, singly or in the aggregate, would reasonably be expected to result in a Material Adverse Effect. There is no pending or threatened action, suit, proceeding or claim by others of which the Company has received written notice: (A) challenging the Company's rights in or to any Company Intellectual Property, and the Company is unaware of any facts which would form a reasonable basis for any such action, suit, proceeding or claim; (B) challenging the validity, enforceability or scope of any Company Intellectual Property owned by, or exclusively licensed to, the Company or its Subsidiaries, and the Company is unaware of any facts which would form a reasonable basis for any such action, suit, proceeding or claim; or (C) asserting that the Company or any of its Subsidiaries infringes or otherwise violates, or would, upon the commercialization of any product or service described in the Registration Statement or the Prospectus as under development, infringe or violate, any Intellectual Property rights of others, and the Company and its Subsidiaries are unaware of any facts which would form a reasonable basis for any such action, suit, proceeding or claim. To the Company's knowledge, no employee of the Company who has developed Company Intellectual Property is in violation of any term of any employment contract, patent disclosure agreement, invention assignment agreement, non-competition agreement, non-solicitation agreement, nondisclosure agreement or any restrictive covenant to or with a former employer where the basis of such violation relates to such employee's employment with the Company. The Company and its Subsidiaries are in compliance in all material respects with the terms of each agreement pursuant to which Company Intellectual Property is licensed to the Company or any Subsidiary, and all such agreements are

in full force and effect in accordance with their terms. The patents included in the Company Intellectual Property owned by the Company or, to the Company's knowledge, exclusively licensed to the Company are subsisting and have not lapsed and the patent applications in the Intellectual Property owned by the Company or exclusively licensed to the Company are pending and have not been abandoned. To the Company's knowledge, except as set forth in the Registration Statement and the Prospectus, the Company and its Subsidiary are not obligated or under any liability whatsoever to make any material payment by way of royalties, fees or otherwise to any owner or licensee of, or other claimant to, any Intellectual Property, with respect to the use thereof or in connection with the conduct of their respective businesses or otherwise. No technology employed by the Company or its Subsidiaries has been obtained or is being used by the Company or its Subsidiaries in violation of any contractual or legal obligation binding on the Company, its Subsidiaries, or any of their officers, directors, employees, or contractors, or in violation of any contractual rights of any persons. All patents and patent applications included in the Company Intellectual Property that are owned by or exclusively licensed to the Company have been duly and properly filed and maintained and the parties prosecuting such applications have complied in all material respects with their duty of candor and disclosure to the U.S. Patent and Trademark Office (the "USPTO") in connection with such applications. To the Company's knowledge, there is no patent or published patent application, in the U.S. or other jurisdiction, that is not included in the Company Intellectual Property and that, in the case of a patent, contains claims, or in the case of a published patent application contains patentable claims, that dominates any of the Company Intellectual Property described in the Preliminary Prospectus and Prospectus as being owned by or licensed to the Company or that interferes with the issued or pending claims of any of the Company Intellectual Property owned by or, to the Company's knowledge, exclusively licensed to the Company.

(y) The preclinical tests and clinical trials, and other studies conducted by or on behalf of the Company (collectively, "studies") that are described in, or the results of which are referred to in, the Registration Statement or the Prospectus were and, if still pending, are being conducted in all material respects in accordance with the protocols, procedures and controls designed and approved for such studies and with Good Clinical Practices and all applicable laws, including, without limitation, the Federal Food, Drug, and Cosmetic Act and its implementing regulations at 21 C.F.R. Parts 50, 54, 56, 58, and 312; each description of the results of such studies is accurate and complete in all material respects and fairly presents the data derived from such studies, and the Company and its Subsidiaries have no knowledge of any other studies the results of which are inconsistent with, or otherwise call into question, the results described or referred to in the Registration Statement or the Prospectus; neither the Company nor any of its Subsidiaries has received any notice of, or correspondence from, any Regulatory Agency requiring the termination, suspension or modification of any clinical trials that are described or referred to in the Registration Statement or the Prospectus.

(z) The Company: (i) has operated and currently operates its business in compliance in all material respects with applicable provisions of the health care laws, including Title XVIII of the Social Security Act, 42 U.S.C. §§ 1395-1395lll (the Medicare statute); Title XIX of the Social Security Act, 42 U.S.C. §§ 1396-1396w-5 (the Medicaid statute); the Federal Anti-Kickback Statute, 42 U.S.C. § 1320a-7b(b); the civil False Claims Act, 31 U.S.C. §§ 3729 et seq.; the criminal False Claims Act 42 U.S.C. 1320a-7b(a); the criminal laws relating to health care fraud and abuse, including 18 U.S.C. §§ 286 and 287 and the health care fraud criminal provisions under the Health Insurance Portability and Accountability Act of 1996, 42 U.S.C. §§ 1320d et seq., ("HIPAA"); the Civil Monetary Penalties Law, 42 U.S.C. §§ 1320a-7a; the Physician Payments Sunshine Act, 42 U.S.C. § 1320a-7h; the exclusion law, 42 U.S.C. § 1320a-7; HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act, 42 U.S.C. §§ 17921 et seq.; the Federal Food, Drug, and Cosmetic Act, 21 U.S.C. §§ 301 et seq.; the Public Health Service Act, 42 U.S.C. §§ 201 et seq.; the regulations promulgated pursuant to such laws; and any similar federal, state, local and foreign laws and regulations of any governmental authority including the United States Food and Drug Administration of the U.S. Department of Health and Human Services or any committee thereof or from any other U.S. or foreign government or drug or

medical device regulatory agency, or health care facility Institutional Review Board (collectively, the “Regulatory Agencies”) applicable to the ownership, testing, development, manufacture, packaging, processing, use, distribution, storage, import, export or disposal of any of the Company’s product candidates, (collectively the “Health Care Laws”); (ii) has not received any United States Food and Drug Administration Form 483, written notice of adverse finding, warning letter, untitled letter or other correspondence or written notice from any court or arbitrator or governmental or regulatory authority alleging or asserting non-compliance with (A) any Health Care Laws or (B) any licenses, approvals, clearances, exemptions, permits, registrations, authorizations, and supplements or amendments thereto required by any such Health Care Laws (“Regulatory Authorizations”); (iii) possesses all Regulatory Authorizations required to conduct its business as currently conducted and such Regulatory Authorizations are valid and in full force and effect and the Company is not in violation, in any material respect, of any term of any such Regulatory Authorizations; (iv) has fulfilled and performed all of its material obligations with respect to the Regulatory Authorizations and, to the Company’s knowledge, no event has occurred which allows, or after notice or lapse of time would allow, revocation or termination thereof or results in any other material impairment of the rights of the holder of any such Regulatory Authorization; (v) has not received notice of any claim, action, suit, proceeding, hearing, enforcement, investigation, arbitration or other action (“Proceeding”) from any governmental authority including any Regulatory Agency or any other third party alleging a material violation of any Health Care Laws or Regulatory Authorizations or limiting, suspending, modifying, or revoking any material Regulatory Authorizations, and has no knowledge that any governmental authority including any Regulatory Agencies or any other third party is considering any Proceeding; (vi) has filed, obtained, maintained or submitted all material reports, documents, forms, notices, applications, records, claims, submissions and supplements or amendments as required by any Health Care Laws or Regulatory Authorizations (“Reports”) and that all such Reports were materially complete and correct on the date filed (or were materially corrected or supplemented by a subsequent submission); (vii) along with its employees, officers and directors, and to the Company’s knowledge, independent contractors and agents, is not a party to or has any ongoing reporting obligations pursuant to any corporate integrity agreements, deferred prosecution agreements, monitoring agreements, consent decrees, settlement orders, plans of correction or similar agreements with or imposed by any governmental authority including any Regulatory Agencies; and (viii) along with its employees, officers and directors, and, to the Company’s knowledge, independent contractors and agents, has not been excluded, suspended or debarred from, or otherwise ineligible for participation in any government health care program or human clinical research.

(aa) Except as would not, singly or in the aggregate, result in a Material Adverse Effect, (A) neither the Company nor any of its Subsidiaries is 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 and its Subsidiaries have all permits, authorizations and approvals required under any applicable Environmental Laws and are each in compliance with their requirements, (C) there are no pending or, to the Company’s knowledge, threatened administrative, regulatory or judicial actions, suits, demands, demand letters, claims, liens, notices of noncompliance or violation, investigations or proceedings relating to any Environmental Law against the Company or any of its Subsidiaries and (D) to the Company’s knowledge, 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 or any of its Subsidiaries relating to Hazardous Materials or any Environmental Laws.

(bb) The Company and its Subsidiaries, on a consolidated basis, maintain a system of effective internal control over financial reporting (as defined under Rules 13-a15 and 15d-15 under 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 included or incorporated by reference in the Registration Statement, the General Disclosure Package and the Prospectus fairly presents the information called for in all material respects and is prepared in accordance with the Commission's rules and guidelines applicable thereto. Except as 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 and adversely affected, or is reasonably likely to materially and adversely affect, the Company's internal control over financial reporting.

The Company and each of its Subsidiaries maintain an effective system of disclosure controls and procedures (as defined in Rule 13a-15 and Rule 15d-15 under the 1934 Act Regulations) that are designed to ensure that 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.

(cc) 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 (the "Sarbanes-Oxley Act"), including Section 402 related to loans and Sections 302 and 906 related to certifications.

(dd) All United States federal income tax returns of the Company and its Subsidiaries required by law to be filed by them have been filed or a timely extension has been requested thereof and all taxes shown by such returns, which are due and payable, have been paid, except taxes against which appeals have been or will be promptly taken and as to which adequate reserves have been provided in accordance with GAAP or to the extent any failure to file or pay such taxes or assessments would not result in a Material Adverse Effect. The United States federal income tax returns of the Company through the fiscal year ended December 31, 2018 have been settled and no assessment in connection therewith has been made against the Company. The Company and its Subsidiaries have filed all other tax returns that are required to have been filed by them pursuant to applicable foreign, state, local or other law except insofar as the failure to do so would not reasonably be expected to 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 and its Subsidiaries, 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 in accordance with GAAP or where the failure to do so would not result in a Material Adverse Effect. No tax deficiency has been determined adversely to the

Company (nor does the Company have any notice or knowledge of any tax deficiency which could reasonably be expected to be determined adversely to the Company). The charges, accruals and reserves on the books of the Company in respect of any income or 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 reasonably be expected to result in a Material Adverse Effect.

(ee) The Company and its Subsidiaries carry or are entitled to the benefits of insurance, with financially sound and reputable insurers, in such amounts and covering such risks as the Company reasonably believes is generally maintained by companies of established repute and comparable size 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 or any of its Subsidiaries 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 reasonably be expected to result in a Material Adverse Effect. Neither of the Company nor any of its Subsidiaries has been denied any insurance coverage which it has sought or for which it has applied.

(ff) The Company is not required, and upon the issuance and sale of the Securities as herein contemplated and the application of the net proceeds therefrom as described in the Registration Statement and the Prospectus will not be required, to register as an “investment company” under the Investment Company Act of 1940, as amended.

(gg) Neither the Company nor any affiliate of the Company has taken, nor will the Company or any affiliate take, directly or indirectly, any action which is designed, or would reasonably 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 the Securities or to result in a violation of Regulation M under the 1934 Act.

(hh) None of the Company, any of its Subsidiaries or, to the knowledge of the Company, any director, officer, agent, employee, affiliate or other person acting on behalf of the Company or any of its Subsidiaries is aware of or has taken any action, directly or indirectly, that would result in a violation by such persons of 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 and the Company and its Subsidiaries and, to the knowledge of the Company, its affiliates have conducted their businesses in compliance with the FCPA and have instituted and maintain policies and procedures designed to ensure, and which are reasonably expected to continue to ensure, continued compliance therewith.

(ii) The operations of the Company and its Subsidiaries are and have been conducted at all times in compliance with applicable financial recordkeeping and reporting requirements of the Currency and Foreign Transactions Reporting Act of 1970, as amended, the money laundering statutes of all applicable 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”); and no action, suit or proceeding by or before any Governmental Entity involving the Company or any of its Subsidiaries with respect to the Money Laundering Laws is pending or, to the knowledge of the Company, threatened.

(jj) None of the Company, any of its Subsidiaries or, to the knowledge of the Company, any director, officer, agent, employee, affiliate or representative of the Company or any of its Subsidiaries is 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 (“OFAC”), the United Nations Security Council, the European Union, Her Majesty’s Treasury, or other relevant sanctions authority (collectively, “Sanctions”), nor is the Company located, organized or resident in a country or territory that is the subject of Sanctions; and the Company will not directly or indirectly use the proceeds of the sale of the Securities, or lend, contribute or otherwise make available such proceeds to any Subsidiaries, joint venture partners or other Person, 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.

(kk) Except as disclosed in the Registration Statement and the Prospectus, the Company (i) does not have any material lending or other relationship with any banking or lending affiliate of any Agent and (ii) does not intend to use any of the proceeds from the sale of the Placement Shares to repay any outstanding debt owed to any affiliate of any Agent.

(ll) 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.

(mm) No securities issued or guaranteed by, or loans to, the Company are rated by any “nationally recognized statistical rating organization” (as defined by the Commission in Section 3(a)(62) of the 1934 Act).

(nn) The Company and its Subsidiaries are, and at all prior times since inception were, in material compliance with all applicable data privacy and data security laws and regulations, including without limitation HIPAA, the HITECH Act, and the European Union General Data Protection Regulation (“GDPR”) (EU 2016/679) (and all other applicable laws and regulations with respect to Personal Data (defined below) that have been announced as of the date hereof as becoming effective within 12 months after the date hereof, and for which any non-compliance with same would be reasonably likely to create a material liability) (collectively, the “Privacy Laws”). To support compliance with the Privacy Laws, the Company and its Subsidiaries have in place, and take appropriate steps reasonably designed to ensure compliance in all material respects with, policies and procedures relating to data privacy and data security and the collection, storage, use, disclosure, handling, and analysis of Personal Data (the “Policies”). At all times since inception, the Company has provided accurate notice of its Policies then in effect to its customers, employees, third party vendors and representatives. Each of the Company Policies provides accurate and sufficient notice of the Company’s then-current privacy practices relating to its subject matter and such Company Policies do not contain any material omissions of the Company’s then-current privacy practices. “Personal Data” means (i) a natural person’s name, street address, telephone number, e-mail address, photograph, social security number or tax identification number, driver’s license number, passport number, credit card number, bank information, or customer or account number; (ii) any information which would qualify as “personally identifying information” under the Federal Trade Commission Act, as amended; (iii) Protected Health Information as defined by HIPAA; (iv) “personal data” as defined by GDPR, and (v) any other piece of information that allows the identification of such natural person, or his or her family, or permits the collection or analysis of any data related to an identified person’s health or sexual orientation that is not aggregated with the data of other individuals or otherwise irreversibly anonymized such that a natural person cannot be identified. The Company and its Subsidiaries since inception have at all times made all disclosures to users or customers required by applicable laws and regulatory rules or requirements, and have provided accurate notice of its

Policies then in effect to its customers, employees, third party vendors and representatives. None of such disclosures made or contained in any of the Policies have been inaccurate, misleading, deceptive or in violation of any Privacy Laws or Policies in any material respect. The execution, delivery and performance of this Agreement or any other agreement referred to in this Agreement will not result in a breach of violation of any Privacy Laws or Policies. The Company further certifies that neither it nor any Subsidiary: (i) has received notice of any actual or potential liability under or relating to, or actual or potential violation of, any of the Privacy Laws, and has no knowledge of any event or condition that would reasonably be expected to result in any such notice; (ii) is currently conducting or paying for, in whole or in part, any investigation, remediation, or other corrective action pursuant to any Privacy Law; or (iii) is a party to any order, decree, or agreement that imposes any obligation or liability under any Privacy Law.

(oo) (A) To the Company's knowledge, there has been no security breach or incident, attack, or other compromise of or relating to any of the Company or its Subsidiaries information technology and computer systems, networks, hardware, software, data and databases (including the data of their respective customers, employees, suppliers, vendors and any third party data maintained, processed or stored by the Company and its Subsidiaries, and any such data processed or stored by third parties on behalf of the Company and its Subsidiaries), equipment or technology (collectively, "IT Systems and Data"); (B) neither the Company nor its Subsidiaries have been notified of, and each of them have no knowledge of any event or condition that would reasonably be expected to result in, any material security breach or incident, attack or other compromise to their IT Systems and Data and (C) the Company and its Subsidiaries have implemented appropriate controls, policies, procedures, and technological safeguards reasonably likely to maintain and protect the integrity, continuous operation, redundancy and security of their IT Systems and Data reasonably consistent with industry standards and practices, or as required by applicable regulatory standards. The Company and its Subsidiaries are presently in compliance 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 IT Systems and Data and to the protection of such IT Systems and Data from unauthorized use, access, misappropriation or modification, except as would not be reasonably expected to result in a Material Adverse Effect.

(pp) The Company has not distributed and, prior to the later to occur of each Settlement Date and completion of the Designated Agent's distribution of the Placement Shares under this Agreement, will not distribute any offering material in connection with the offering and sale of the Placement Shares other than the Registration Statement, the Prospectus or any Permitted Free Writing Prospectus (as defined below).

(qq) No person (as such term is defined in Rule 1-02 of Regulation S-X promulgated under the Securities Act) has the right to act as an underwriter or as a financial advisor to the Company in connection with the offer and sale of the Placement Shares hereunder, whether as a result of the filing or effectiveness of the Registration Statement or the sale of the Placement Shares as contemplated hereby or otherwise. Except for the Agent, there is no broker, finder or other party that is entitled to receive from the Company or any of its Subsidiaries (as defined below) any brokerage or finder's fee or other fee or commission as a result of any transactions contemplated by this Agreement.

(rr) The Company acknowledges and agrees that the Agents have informed the Company that the Agents may, to the extent permitted under the Securities Act and the Exchange Act, purchase and sell shares of Common Stock for their own account while this Agreement is in effect; provided, that (i) no such purchase or sales shall take place while a Placement Notice is in effect (except to the extent the Agent may engage in sales of Placement Shares purchased or deemed purchased from the Company as a "riskless principal" or in a similar capacity) and (ii) the Company shall not be deemed to have authorized or consented to any such purchases or sales by the Agent, except as may be otherwise agreed by the Company and the Agent.

(ss) The Company is not a party to any agreement with an agent or underwriter for any other “at the market” or continuous equity transaction.

(tt) Neither the Company nor, to the Company’s knowledge, any of its affiliates (within the meaning of Rule 144 under the Securities Act) has, prior to the date hereof, made any offer or sale of any securities which could be “integrated” (within the meaning of the Securities Act) with the offer and sale of the Placement Shares hereunder.

(uu) Any certificate signed by any officer of the Company and delivered to the Agents or their counsel in connection with the offering of the Placement Shares shall be deemed a representation and warranty by the Company, as to matters covered thereby, to the Agents.

Any certificate signed by any officer of the Company and delivered to the Agents or their counsel in connection with the offering of the Placement Shares shall be deemed a representation and warranty by the Company, as to matters covered thereby, to the Agents.

7. Covenants of the Company. The Company covenants and agrees with the Agent that:

(a) Registration Statement Amendments. After the date of this Agreement and during any period in which the Prospectus relating to any Placement Shares is required to be delivered by the Agents under the Securities Act (including in circumstances where such requirement may be satisfied pursuant to Rule 172 under the Securities Act or a similar rule); (i) the Company will notify the Agents promptly of the time when any subsequent amendment to the Registration Statement, other than Incorporated Documents, has been filed with the Commission and/or has become effective or any subsequent supplement to the Prospectus, other than Incorporated Documents, has been filed and of any request by the Commission for any amendment or supplement to the Registration Statement or Prospectus or for additional information; (ii) the Company will prepare and file with the Commission, promptly upon the Agents’ request, any amendments or supplements to the Registration Statement or Prospectus that, in the Agents’ reasonable opinion, may be necessary or advisable in connection with the distribution of the Placement Shares by the Agents (provided, however, that the failure of the Agents to make such request shall not relieve the Company of any obligation or liability hereunder, or affect the Agents’ right to rely on the representations and warranties made by the Company in this Agreement and provided, further, that the only remedy the Agents shall have with respect to the failure by the Company to make such filing (but without limiting the Agents’ rights under Section 9 hereof) will be to cease making sales under this Agreement until such amendment or supplement is filed); (iii) the Company will not file any amendment or supplement to the Registration Statement or Prospectus, other than Incorporated Documents, relating to the Placement Shares or a security convertible into or exchangeable or exercisable for the Placement Shares unless a copy thereof has been submitted to the Agents within a reasonable period of time before the filing and the Agents have not reasonably objected thereto (provided, however, that the failure of the Agents to make such objection shall not relieve the Company of any obligation or liability hereunder, or affect the Agents’ right to rely on the representations and warranties made by the Company in this Agreement and provided, further, that the only remedy the Agents shall have with respect to the Company’s making such filing notwithstanding the Agents’ objection (but without limiting the Agents’ rights under Section 9 hereof) will be to cease making sales under this Agreement) and the Company will furnish to the Agents at the time of filing thereof a copy of any Incorporated Document, except for those documents available via EDGAR; and (iv) the Company will cause each amendment or supplement to the Prospectus, other than Incorporated Documents, to be filed with the Commission as required pursuant to the applicable paragraph of Rule 424(b) of the Securities Act and, in the case of any Incorporated Document, to be filed with the Commission as required pursuant to the Exchange Act, within the time period prescribed.

(b) Notice of Commission Stop Orders. The Company will advise the Agents, promptly after it receives notice or obtains knowledge thereof, of the issuance or threatened issuance by the Commission of any stop order suspending the effectiveness of the Registration Statement, of the suspension of the qualification of the Placement Shares for offering or sale in any jurisdiction or of the initiation or threatening of any proceeding for any such purpose; and it will promptly use its commercially reasonable efforts to prevent the issuance of any stop order or to obtain its withdrawal if such a stop order should be issued. The Company will advise the Agents promptly after it receives any request by the Commission for any amendments to the Registration Statement or any amendment or supplements to the Prospectus or for additional information related to the offering of the Placement Shares or for additional information related to the Registration Statement or the Prospectus.

(c) Delivery of Prospectus; Subsequent Changes. During any period in which the Prospectus relating to the Placement Shares is required to be delivered by the Agents under the Securities Act with respect to the offer and sale of the Placement Shares (including in circumstances where such requirement may be satisfied pursuant to Rule 172 under the Securities Act or a similar rule), the Company will comply with all requirements imposed upon it by the Securities Act, as from time to time in force, and will file on or before their respective due dates (taking into account any extensions available under the Exchange Act) all reports and any definitive proxy or information statements required to be filed by the Company with the Commission pursuant to Sections 13(a), 13(c), 14, 15(d) or any other provision of or under the Exchange Act. If during such period any event occurs as a result of which the Prospectus as then amended or supplemented would include an untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in the light of the circumstances then existing, not misleading, or if during such period it is necessary to amend or supplement the Registration Statement or Prospectus to comply with the Securities Act, the Company will promptly notify the Agents to suspend the offering of Placement Shares during such period and the Company will promptly amend or supplement the Registration Statement or Prospectus (at the expense of the Company) so as to correct such statement or omission or effect such compliance. If the Company has omitted any information from the Registration Statement pursuant to Rule 430B under the Securities Act, it will use its best efforts to comply with the provisions thereof and make all requisite filings with the Commission pursuant to said Rule 430B and to notify the Agents promptly of all such filings if not available on EDGAR.

(d) Listing of Placement Shares. During any period in which the Prospectus relating to the Placement Shares is required to be delivered by the Agents under the Securities Act with respect to the offer and sale of the Placement Shares (including in circumstances where such requirement may be satisfied pursuant to Rule 172 under the Securities Act or a similar rule), the Company will use its commercially reasonable efforts to cause the Placement Shares to be listed on Nasdaq. The Company will timely file with Nasdaq all material documents and notices required by Nasdaq of companies that have or will issue securities that are traded on Nasdaq.

(e) Delivery of Registration Statement and Prospectus. The Company will furnish to the Agents and their counsel (at the expense of the Company) copies of the Registration Statement, the Prospectus (including all Incorporated Documents) and all amendments and supplements to the Registration Statement or Prospectus that are filed with the Commission during any period in which the Prospectus relating to the Placement Shares is required to be delivered under the Securities Act (including all Incorporated Documents filed with the Commission during such period), in each case as soon as reasonably practicable and in such quantities as the Agents may from time to time reasonably request and, at the Agents' request, will also furnish copies of the Prospectus to each exchange or market on which sales of the Placement Shares may be made; *provided, however*, that the Company shall not be required to furnish any document (other than the Prospectus) to the Agents to the extent such document is available on EDGAR.

(f) Earnings Statement. The Company will make generally available to its security holders and to the Agent as soon as practicable, but in any event not later than 15 months after the end of the Company's current fiscal quarter, an earnings statement covering a 12-month period that satisfies the provisions of Section 11(a) of and Rule 158 under the Securities Act.

(g) Expenses. The Company, whether or not the transactions contemplated hereunder are consummated or this Agreement is terminated in accordance with the provisions of Section 11 hereunder, will pay all expenses incident to the performance of its obligations hereunder, including expenses relating to (i) the preparation, printing and filing of the Registration Statement and each amendment and supplement thereto, of the Prospectus and of each amendment and supplement thereto and of this Agreement and such other documents as may be required in connection with the offering, purchase, sale, issuance or delivery of the Placement Shares, (ii) the preparation, issuance, sale and delivery of the Placement Shares and any taxes due or payable in connection therewith, (iii) the qualification of the Placement Shares under securities laws in accordance with the provisions of Section 7(w) of this Agreement, including filing fees (provided, however, that any fees or disbursements of counsel for the Agents in connection therewith shall be paid by the Agents except as set forth in clauses (vii) and (viii) below), (iv) the printing and delivery to the Agents and their counsel of copies of the Prospectus and any amendments or supplements thereto, and of this Agreement, (v) the fees and expenses incurred in connection with the listing or qualification of the Placement Shares for trading on Nasdaq, (vi) the filing fees and expenses, if any, owed to the Commission or FINRA and the fees and expenses of any transfer agent or registrar for the Shares, (vii) the fees and associated expenses of the Agents' outside legal counsel for filings with the FINRA Corporate Financing Department in an amount not to exceed \$5,000 (excluding FINRA filing fees referred to in clause (vi) above and in addition to the fees and disbursements referred to in clause (viii) below), and (viii) the reasonable fees and disbursements of the Agents' outside legal counsel (A) in an amount not to exceed \$50,000 arising out of executing this Agreement and the Company's delivery of the initial certificate pursuant to Section 7(m) and (B) in an amount not to exceed \$10,000 in connection with each Representation Date (as defined below) on which the Company is required to provide a certificate pursuant to Section 7(m) (in addition to the fees and associated expenses referred to in clause (vii) above).

(h) Use of Proceeds. The Company will use the Net Proceeds as described in the Prospectus in the section entitled "Use of Proceeds."

(i) Notice of Other Sales. Without the prior written consent of the Agents, the Company will not, directly or indirectly, offer to sell, sell, contract to sell, grant any option to sell or otherwise dispose of any shares of Common Stock (other than the Placement Shares offered pursuant to this Agreement) or securities convertible into or exchangeable or exercisable for shares of Common Stock, warrants or any rights to purchase or acquire shares of Common Stock during the period beginning on the fifth Trading Day immediately prior to the date on which any Placement Notice is delivered to the Agents hereunder and ending on the second Trading Day immediately following the final Settlement Date with respect to Placement Shares sold pursuant to such Placement Notice (or, if the Placement Notice has been terminated or suspended prior to the sale of all Placement Shares covered by a Placement Notice, the date of such suspension or termination); and will not directly or indirectly in any other "at the market offering" or continuous equity transaction offer to sell, sell, contract to sell, grant any option to sell or otherwise dispose of any shares of Common Stock (other than the Placement Shares offered pursuant to this Agreement) or securities convertible into or exchangeable or exercisable for shares of Common Stock, warrants or any rights to purchase or acquire, shares of Common Stock prior to the later of the termination of this Agreement and the sixtieth day immediately following the final Settlement Date with

respect to Placement Shares sold pursuant to such Placement Notice; *provided, however*, that such restrictions will not be required in connection with the Company's issuance or sale of (i) shares of Common Stock, options to purchase shares of Common Stock, other securities under the Company's existing equity incentive plans, or shares of Common Stock issuable upon the exercise of options or vesting of other securities, pursuant to any employee or director stock option or benefits plan, stock ownership plan or dividend reinvestment plan (but not shares of Common Stock subject to a waiver to exceed plan limits in its dividend reinvestment plan) of the Company whether now in effect or hereafter implemented, (ii) shares of Common Stock issuable upon conversion of securities or the exercise of warrants, options or other rights in effect or outstanding, and disclosed in filings by the Company available on EDGAR or otherwise in writing to the Agents and (iii) shares of Common Stock or securities convertible into or exchangeable for shares of Common Stock as consideration for mergers, acquisitions, other business combinations or strategic alliances occurring after the date of this Agreement which are not issued for capital raising purposes.

(j) Change of Circumstances. The Company will, at any time during a fiscal quarter in which the Company intends to tender a Placement Notice or sell Placement Shares, advise the Agents promptly after it shall have received notice or obtained knowledge of any information or fact that would alter or affect in any material respect any opinion, certificate, letter or other document provided or required to be provided to the Agents pursuant to this Agreement.

(k) Due Diligence Cooperation. During the term of this Agreement, the Company will cooperate with any reasonable due diligence review conducted by the Agents, or their affiliates agents and counsel from time to time in connection with the transactions contemplated hereby, including providing information and making available documents and senior corporate officers, during regular business hours and at the Company's principal offices, as the Agents may reasonably request.

(l) Required Filings Relating to Placement of Placement Shares. The Company agrees that on or prior to such dates as the Securities Act shall require, the Company will (i) file a prospectus supplement with the Commission under the applicable paragraph of Rule 424(b) under the Securities Act, which prospectus supplement will set forth, within the relevant period, the number or amount of Placement Shares sold through the Agents, the Net Proceeds to the Company and the compensation payable by the Company to the Agents with respect to such Placement Shares, and (ii) deliver such number of copies of each such prospectus supplement to each exchange or market on which such sales were effected as may be required by the rules or regulations of such exchange or market; *provided*, that, unless a prospectus supplement containing such information is required to be filed under the Securities Act, the requirement of this Section 7(l) may be satisfied by Company's inclusion in the Company's Form 10-K or Form 10-Q, as applicable, of the number or amount of Placement Shares sold through the Agents, the Net Proceeds to the Company and the compensation payable by the Company to the Agents with respect to such Placement Shares during the relevant period.

(m) Representation Dates; Certificate. On or prior to the date on which the Company first delivers a Placement Notice pursuant to this agreement (the "**First Placement Notice Date**") and each time the Company:

(i) amends or supplements the Registration Statement or the Prospectus relating to the Placement Shares (other than a prospectus supplement filed in accordance with Section 7(l) of this Agreement) by means of a post-effective amendment, sticker or supplement but not by means of incorporation of document(s) by reference into the Registration Statement or the Prospectus relating to the Placement Shares;

(ii) files an annual report on Form 10-K under the Exchange Act (including any Form 10-K/A containing amended financial information or a material amendment to the previously filed Form 10-K);

(iii) files a quarterly report on Form 10-Q under the Exchange Act; or

(iv) files a current report on Form 8-K containing amended financial information (other than an earnings release that is “furnished” pursuant to Item 2.02 or Item 7.01 of Form 8-K) under the Exchange Act (each date of filing of one or more of the documents referred to in clauses (i) through (iv) shall be a “**Representation Date**”),

the Company shall furnish the Agents (but in the case of clause (iv) above only if (1) a Placement Notice is pending or in effect and (2) the Agents request such certificate within two Business Days after the filing of such Form 8-K with the Commission) with a certificate, in the form attached hereto as **Exhibit 7(m)** (modified, as necessary, to relate to the Registration Statement and the Prospectus as then amended or supplemented), within two Trading Days of any Representation Date. The requirement to provide a certificate under this Section 7(m) shall be waived for any Representation Date occurring at a time at which no Placement Notice is pending or in effect, which waiver shall continue until the earlier to occur of (1) the date the Company delivers a Placement Notice hereunder (which for such calendar quarter shall be considered a Representation Date) and (2) the next occurring Representation Date. Notwithstanding the foregoing, if the Company subsequently decides to sell Placement Shares following a Representation Date on which the Company relied on the waiver referred to in the previous sentence and did not provide the Agents with a certificate under this Section 7(m), then before the Company delivers a Placement Notice or either of the Agents sell any Placement Shares pursuant thereto, the Company shall provide the Agents with a certificate, in the form attached hereto as **Exhibit 7(m)**, dated the date of such Placement Notice. Within two Trading Days of each Representation Date, the Company shall have furnished to the Agents such further information, certificates and documents as the Agents may reasonably request.

(n) **Legal Opinions.** On or prior to the First Placement Notice Date and on any date which the Company is obligated to deliver a certificate pursuant to Section 7(m) for which no waiver is applicable, the Company shall cause to be furnished to the Agents the written opinion and negative assurance letter of Gibson, Dunn & Crutcher LLP, counsel to the Company, or such other counsel satisfactory to the Agents (“**Company Counsel**”), in form and substance satisfactory to the Agents and their counsel, dated the date that the opinion and negative assurance letter are required to be delivered, modified, as necessary, to relate to the Registration Statement and the Prospectus as then amended or supplemented; *provided, however*, that in lieu of such opinion and negative assurance letter for subsequent Representation Dates, Company Counsel may furnish the Agents with a letter to the effect that the Agents may rely on a prior opinion or negative assurance letter delivered by such counsel under this Section 7(n) to the same extent as if it were dated the date of such letter (except that statements in such prior opinion or negative assurance letter shall be deemed to relate to the Registration Statement and the Prospectus as amended or supplemented at such Representation Date).

(o) **Intellectual Property Opinion.** On or prior to the First Placement Notice Date and on any date which the Company is obligated to deliver a certificate pursuant to Section 7(m) for which no waiver is applicable, the Company shall cause to be furnished to the Agents the written opinion of Greenburg Traurig, LLP, counsel for the Company with respect to intellectual property matters, or such other intellectual property counsel satisfactory to the Agents (“**Intellectual Property Counsel**”), in form and substance satisfactory to the Agents and their counsel, dated the date that the opinion letter is required to be delivered, modified, as necessary, to relate to the Registration Statement and the Prospectus as then amended or supplemented; *provided, however*, that in lieu of such written opinion for subsequent Representation Dates, Intellectual Property Counsel may furnish the Agents with a letter to the effect that

the Agents may rely on a prior opinion letter delivered by such counsel under this Section 7(o) to the same extent as if it were dated the date of such opinion letter (except that statements in such prior opinion letter shall be deemed to relate to the Registration Statement and the Prospectus as amended or supplemented at such Representation Date).

(p) Comfort Letter. On or prior to the First Placement Notice Date and on any date which the Company is obligated to deliver a certificate pursuant to Section 7(m) for which no waiver is applicable, the Company shall cause its independent registered public accounting firm (and any other independent accountants whose report is included in the Registration Statement or the Prospectus) to furnish the Agents letters (the “**Comfort Letters**”), dated the date the Comfort Letter is delivered, which shall meet the requirements set forth in this Section 7(p); *provided*, that if requested by the Agents, the Company shall cause a Comfort Letter to be furnished to the Agents within 10 Trading Days of the occurrence of any material transaction or event that necessitates the filing of additional, pro forma, amended or revised financial statements (including any restatement of previously issued financial statements). Each Comfort Letter shall be in form and substance satisfactory to the Agents and each Comfort Letter from the Company’s independent registered public accounting firm shall (i) confirm that they are an independent registered public accounting firm within the meaning of the Securities Act and the Public Company Accounting Oversight Board (PCAOB), (ii) state, as of such date, the conclusions and findings of such firm with respect to the financial information and other matters ordinarily covered by accountants’ “comfort letters” to underwriters in connection with registered public offerings (the first such letter, the “**Initial Comfort Letter**”) and (iii) update the Initial Comfort Letter with any information that would have been included in the Initial Comfort Letter had it been given on such date and modified as necessary to relate to the Registration Statement and the Prospectus, as amended and supplemented to the date of such letter.

(q) Market Activities. The Company will not, directly or indirectly, and will cause its officers, directors and Subsidiaries not to (i) take any action designed to cause or result in, or that constitutes or might reasonably be expected to constitute, the stabilization or manipulation of the price of any security of the Company to facilitate the sale or resale of shares of Common Stock or (ii) sell, bid for, or purchase shares of Common Stock in violation of Regulation M, or pay anyone any compensation for soliciting purchases of the Placement Shares other than the Agents; *provided, however*, that the Company may bid for and purchase shares of Common Stock in accordance with Rule 10b-18 under the Exchange Act.

(r) Insurance. The Company and its Subsidiaries shall maintain, or cause to be maintained, insurance in such amounts and covering such risks as is reasonable and customary for the business for which it is engaged.

(s) [Intentionally omitted.]

(t) Investment Company Act. The Company will conduct its affairs in such a manner so as to reasonably ensure that neither it nor any of its Subsidiaries will be or become, at any time prior to the termination of this Agreement, an “investment company,” as such term is defined in the Investment Company Act.

(u) Securities Act and Exchange Act. The Company will use commercially reasonable efforts to comply with all requirements imposed upon it by the Securities Act and the Exchange Act as from time to time in force, so far as necessary to permit the sales of, or dealings in, the Placement Shares as contemplated by the provisions hereof and the Prospectus.

(v) No Offer to Sell. Other than a free writing prospectus (as defined in Rule 405 under the Securities Act) approved in advance by the Company and the Agents, neither the Agents nor the Company (including its agents and representatives, other than the Agents in their capacity as agents) will make, use, prepare, authorize, approve or refer to any written communication (as defined in Rule 405 under the Securities Act), required to be filed with the Commission, that constitutes an offer to sell or solicitation of an offer to buy Placement Shares hereunder.

(w) Blue Sky and Other Qualifications. The Company will use its commercially reasonable efforts, in cooperation with the Agents, to qualify the Placement Shares for offering and sale, or to obtain an exemption for the Placement Shares to be offered and sold, under the applicable securities laws of such states and other jurisdictions (domestic or foreign) as the Agents may designate and to maintain such qualifications and exemptions in effect for so long as required for the distribution of the Placement Shares (but in no event for less than one year from the date of 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. In each jurisdiction in which the Placement Shares have been so qualified or exempt, the Company will file such statements and reports as may be required by the laws of such jurisdiction to continue such qualification or exemption, as the case may be, in effect for so long as required for the distribution of the Placement Shares (but in no event for less than one year from the date of this Agreement).

(x) Sarbanes-Oxley Act. The Company will maintain and keep accurate books and records reflecting its assets and maintain internal accounting controls in a manner designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with GAAP and including those policies and procedures that (i) pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of the assets of the Company, (ii) provide reasonable assurance that transactions are recorded as necessary to permit the preparation of the Company's financial statements in accordance with GAAP, (iii) that receipts and expenditures of the Company are being made only in accordance with management's and the Company's directors' authorization, and (iv) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the Company's assets that could have a material effect on its financial statements. The Company will maintain such controls and other procedures, including, without limitation, those required by Sections 302 and 906 of the Sarbanes-Oxley Act, and the applicable regulations thereunder that are designed to ensure that information required to be disclosed by the Company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the Commission's rules and forms, including, without limitation, controls and procedures designed to ensure that information required to be disclosed by the Company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the Company's management, including its principal executive officer and principal financial officer, or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure and to ensure that material information relating to the Company is made known to it by others within the Company, particularly during the period in which such periodic reports are being prepared.

(y) Emerging Growth Company. The Company will promptly notify the Agents if the company ceases to be an Emerging Growth Company at any time prior to the completion of the Agent's distribution of the Placement Shares pursuant to this Agreement.

(z) Renewal of Registration Statement. If, immediately prior to the third anniversary of the initial effective date of the Registration Statement (the "Renewal Date"), any of the Placement Shares remain unsold and this Agreement has not been terminated, the Company will, prior to the Renewal Date,

file a new shelf registration statement or, if applicable, an automatic shelf registration statement relating to the Common Stock that may be offered and sold pursuant to this Agreement (which shall include a prospectus reflecting the number or amount of Placement Shares that may be offered and sold pursuant to this Agreement), in a form satisfactory to the Agents and their counsel, and, if such registration statement is not an automatic shelf registration statement, will use its best efforts to cause such registration statement to be declared effective within 180 days after the Renewal Date. The Company will take all other reasonable actions necessary or appropriate to permit the public offer and sale of the Placement Shares to continue as contemplated in the expired registration statement and this Agreement. From and after the effective date thereof, references herein to the "Registration Statement" shall include such new shelf registration statement or such new automatic shelf registration statement, as the case may be.

(aa) General Instruction I.B.6. of Form S-3. If, from and after the date of this Agreement, the Company is no longer eligible to use Form S-3 (including pursuant to General Instruction I.B.6.) at the time it files with the Commission an annual report on Form 10-K or any post-effective amendment to the Registration Statement, then it shall promptly notify the Agents and, within two Business Days after the date of filing of such annual report on Form 10-K or amendment to the Registration Statement, the Company shall file a new prospectus supplement with the Commission reflecting the number of shares of Common Stock available to be offered and sold by the Company under this Agreement pursuant to General Instruction I.B.6. of Form S-3; *provided, however*, that the Company may delay the filing of any such prospectus supplement for up to 30 days if, in the reasonable judgment of the Company, it is in the best interest of the Company to do so, provided that no Placement Notice is in effect or pending during such time. Until such time as the Company shall have corrected such misstatement or omission or effected such compliance, the Company shall not notify the Agents to resume the offering of Placement Shares.

(bb) Tax Indemnity. The Company will indemnify and hold harmless the Agent against any documentary, stamp or similar issue tax, including any interest and penalties, on the issue and sale of the Placement Shares.

(cc) Transfer Agent. The Company has engaged and will maintain, at its sole expense, a transfer agent and registrar for the Common Stock.

8. Conditions to the Agents' Obligations. The obligations of the Agents hereunder with respect to a Placement will be subject to the continuing accuracy and completeness of the representations and warranties made by the Company herein, to the due performance by the Company of its obligations hereunder, to the completion by the Agents of a due diligence review satisfactory to the Agents in its reasonable judgment, and to the continuing satisfaction (or waiver by the Agents in its sole discretion) of the following additional conditions:

(a) Registration Statement Effective. The Registration Statement shall be effective and shall be available for all offers and sales of Placement Shares (i) that have been issued pursuant to all prior Placement Notices and (ii) that will be issued pursuant to any Placement Notice.

(b) Prospectus Supplement. The Company shall have filed with the Commission the Prospectus Supplement pursuant to Rule 424(b) under the Securities Act not later than the Commission's close of business on the second Business Day following the date of this Agreement.

(c) No Material Notices. None of the following events shall have occurred and be continuing: (i) receipt by the Company or any of its Subsidiaries of any request for additional information from the Commission or any other federal or state governmental authority during the period of effectiveness of the Registration Statement, the response to which would require any post-effective

amendments or supplements to the Registration Statement or the Prospectus; (ii) the issuance by the Commission or any other federal or state governmental authority of any stop order suspending the effectiveness of the Registration Statement or the initiation of any proceedings for that purpose; (iii) receipt by the Company or any of its Subsidiaries of any notification with respect to the suspension of the qualification or exemption from qualification of any of the Placement Shares for sale in any jurisdiction or the initiation or threatening of any proceeding for such purpose; or (iv) the occurrence of any event that makes any material statement made in the Registration Statement or the Prospectus or any material Incorporated Document untrue in any material respect or that requires the making of any changes in the Registration Statement, the Prospectus or Incorporated Documents so that, in the case of the Registration Statement, it will not contain any untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary to make the statements therein not misleading and, in the case of the Prospectus, so that it will not contain any untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading.

(d) No Misstatement or Material Omission. The Agents shall not have advised the Company that the Registration Statement or Prospectus, or any amendment or supplement thereto, contains an untrue statement of fact that in the Agents' opinion is material, or omits to state a fact that in the Agents' opinion is material and is required to be stated therein or is necessary to make the statements therein not misleading.

(e) Material Changes. Except as contemplated in the Prospectus, or disclosed in the Company's reports filed with the Commission, there shall not have been any material adverse change, on a consolidated basis, in the authorized capital stock of the Company or any Material Adverse Effect or any development that could reasonably be expected to result in a Material Adverse Effect, or any downgrading in or withdrawal of the rating assigned to any of the Company's securities (other than asset backed securities), if any, by any rating organization or a public announcement by any rating organization that it has under surveillance or review its rating of any of the Company's securities (other than asset backed securities), if any, the effect of which, in the judgment of the Agents (without relieving the Company of any obligation or liability it may otherwise have), is so material as to make it impracticable or inadvisable to proceed with the offering of the Placement Shares on the terms and in the manner contemplated in the Prospectus.

(f) Company Counsel Legal Opinions. The Agents shall have received the opinions and negative assurance letters, as applicable, of Company Counsel and Intellectual Property Counsel required to be delivered pursuant to Section 7(n) and Section 7(o), as applicable, on or before the date on which such delivery of such opinions and negative assurance letters are required pursuant to Section 7(n) and Section 7(o), as applicable.

(g) Agents' Counsel Legal Opinion. The Agents shall have received from Cooley LLP, counsel for the Agents, such opinion, on or before the date on which the delivery of the Company Counsel legal opinion is required pursuant to Section 7(n), with respect to such matters as the Agents may reasonably require, and the Company shall have furnished to such counsel such documents as they may request to enable them to pass upon such matters.

(h) Comfort Letter. The Agents shall have received the Comfort Letter required to be delivered pursuant to Section 7(p) on or before the date on which such delivery of such Comfort Letter is required pursuant to Section 7(p).

(i) Representation Certificate. The Agents shall have received the certificate required to be delivered pursuant to Section 7(m) on or before the date on which delivery of such certificate is required pursuant to Section 7(m).

(j) Secretary's Certificate. On or prior to the First Placement Notice Date, the Agents shall have received a certificate, signed on behalf of the Company by the Secretary of the Company and attested to by an executive officer of the Company, dated as of such date and in form and substance satisfactory to the Agents and their counsel, certifying as to (i) the amended and restated certificate of incorporation of the Company, (ii) the amended and restated bylaws of the Company, (iii) the resolutions of the board of directors of the Company or duly authorized committee thereof authorizing the execution, delivery and performance of this Agreement and the issuance and sale of the Placement Shares and (iv) the incumbency of the officers of the Company duly authorized to execute this Agreement and the other documents contemplated by this Agreement (including each of the officers set forth on Schedule 2).

(k) No Suspension. The Common Stock shall be duly listed, and admitted and authorized for trading, subject to official notice of issuance, on Nasdaq. Trading in the Common Stock shall not have been suspended on, and the Common Stock shall not have been delisted from, Nasdaq.

(l) Other Materials. On each date on which the Company is required to deliver a certificate pursuant to Section 7(m), the Company shall have furnished to the Agents such appropriate further information, opinions, certificates, letters and other documents as the Agents may have reasonably requested. All such information, opinions, certificates, letters and other documents shall have been in compliance with the provisions hereof. The Company shall have furnished the Agents with conformed copies of such opinions, certificates, letters and other documents as the Agents may have reasonably requested.

(m) Securities Act Filings Made. All filings with the Commission required by Rule 424(b) or Rule 433 under the Securities Act to have been filed prior to the issuance of any Placement Notice hereunder shall have been made within the applicable time period prescribed for such filing by Rule 424(b) (without reliance on Rule 424(b)(8) of the Securities Act) or Rule 433, as applicable.

(n) Approval for Listing. Either (i) the Placement Shares shall have been approved for listing on Nasdaq, subject only to notice of issuance, or (ii) the Company shall have filed an application for listing of the Placement Shares on Nasdaq at, or prior to, the First Placement Notice Date and Nasdaq shall have reviewed such application and not provided any objections thereto.

(o) FINRA. FINRA shall have raised no objection to the terms of the offering contemplated hereby and the amount of compensation allowable or payable to the Agents as described in the Prospectus.

(p) No Termination Event. There shall not have occurred any event that would permit the Agents to terminate this Agreement pursuant to Section 11(a).

9. Indemnification and Contribution.

(a) Company Indemnification. The Company agrees to indemnify and hold harmless the Agent, their affiliates and their respective partners, members, directors, officers, employees and agents, and each person, if any, who (i) controls the applicable Agent within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act or (ii) is controlled by or is under common control with the Agents, in each case from and against any and all losses, claims, liabilities, expenses and damages

(including any and all investigative, legal and other expenses reasonably incurred in connection with, and any and all amounts paid in settlement (in accordance with this Section 9), any action, suit, investigation or proceeding between any of the indemnified parties and any indemnifying parties or between any indemnified party and any third party (including any governmental or self-regulatory authority, or otherwise, or any claim asserted or threatened), as and when incurred, to which the Agents, or any such other person may become subject under the Securities Act, the Exchange Act or other federal or state statutory law or regulation, at common law or otherwise, insofar as such losses, claims, liabilities, expenses or damages arise out of or are based, directly or indirectly, on (x) any untrue statement or alleged untrue statement of a material fact contained in the Registration Statement or the Prospectus (or any amendment or supplement to the Registration Statement or the Prospectus) or in any free writing prospectus or in any application or other document executed by or on behalf of the Company or based on written information furnished by or on behalf of the Company filed in any jurisdiction in order to qualify the Common Stock under the securities laws thereof or filed with the Commission, (y) the omission or alleged omission to state in any such document a material fact required to be stated therein or necessary to make the statements therein (solely with respect to the Prospectus, in light of the circumstances under which they were made) not misleading or (z) any breach by any of the indemnifying parties of any of their respective representations, warranties or agreements contained in this Agreement; *provided, however*, that this indemnity agreement shall not apply to the extent that such loss, claim, liability, expense or damage arises from the sale of the Placement Shares pursuant to this Agreement and is caused, directly or indirectly, by an untrue statement or omission, or alleged untrue statement or omission, made in reliance upon and in conformity with the Agents' Information. This indemnity agreement will be in addition to any liability that the Company might otherwise have.

(b) Indemnification by the Agent. Each Agent severally but not jointly, agrees to indemnify and hold harmless the Company and its directors and each officer of the Company who signed the Registration Statement, and each person, if any, who (i) controls the Company within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act or (ii) is controlled by or is under common control with the Company against any and all loss, liability, claim, damage and expense described in the indemnity contained in Section 9(a), as incurred, but only with respect to untrue statements or omissions, or alleged untrue statements or omissions, made in the Registration Statement (or any amendments thereto) or the Prospectus (or any amendment or supplement thereto) in reliance upon and in conformity with the Agent Information.

(c) Procedure. Any party that proposes to assert the right to be indemnified under this Section 9 will, promptly after receipt of notice of commencement of any action against such party in respect of which a claim is to be made against an indemnifying party or parties under this Section 9, notify each such indemnifying party of the commencement of such action, enclosing a copy of all papers served, but the omission so to notify such indemnifying party will not relieve the indemnifying party from (i) any liability that it might have to any indemnified party otherwise than under this Section 9 and (ii) any liability that it may have to any indemnified party under the foregoing provision of this Section 9 unless, and only to the extent that, such omission results in the forfeiture of substantive rights or defenses by the indemnifying party. If any such action is brought against any indemnified party and it notifies the indemnifying party of its commencement, the indemnifying party will be entitled to participate in and, to the extent that it elects by delivering written notice to the indemnified party promptly after receiving notice of the commencement of the action from the indemnified party, jointly with any other indemnifying party similarly notified, to assume the defense of the action, with counsel reasonably satisfactory to the indemnified party, and after notice from the indemnifying party to the indemnified party of its election to assume the defense, the indemnifying party will not be liable to the indemnified party for any other legal expenses except as provided below and except for the reasonable costs of investigation subsequently incurred by the indemnified party in connection with the defense. The indemnified party will have the right to employ its own counsel in any such action, but the fees, expenses

and other charges of such counsel will be at the expense of such indemnified party unless (1) the employment of counsel by the indemnified party has been authorized in writing by the indemnifying party, (2) the indemnified party has reasonably concluded (based on advice of counsel) that there may be legal defenses available to it or other indemnified parties that are different from or in addition to those available to the indemnifying party, (3) a conflict or potential conflict exists (based on advice of counsel to the indemnified party) between the indemnified party and the indemnifying party (in which case the indemnifying party will not have the right to direct the defense of such action on behalf of the indemnified party) or (4) the indemnifying party has not in fact employed counsel reasonably satisfactory to the indemnified party to assume the defense of such action within a reasonable time after receiving notice of the commencement of the action, in each of which cases the reasonable fees, disbursements and other charges of counsel will be at the expense of the indemnifying party or parties. It is understood that the indemnifying party or parties shall not, in connection with any proceeding or related proceedings in the same jurisdiction, be liable for the reasonable fees, disbursements and other charges of more than one separate firm (plus local counsel) admitted to practice in such jurisdiction at any one time for all such indemnified party or parties. All such fees, disbursements and other charges will be reimbursed by the indemnifying party promptly after the indemnifying party receives a written invoice relating to such fees, disbursements and other charges in reasonable detail. An indemnifying party will not, in any event, be liable for any settlement of any action or claim effected without its written consent. No indemnifying party shall, without the prior written consent of each indemnified party, settle or compromise or consent to the entry of any judgment in any pending or threatened claim, action or proceeding relating to the matters contemplated by this Section 9 (whether or not any indemnified party is a party thereto), unless such settlement, compromise or consent (1) includes an unconditional release of each indemnified party, in form and substance reasonably satisfactory to such indemnified party, from all liability arising out of such claim, action or proceeding and (2) 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 an indemnified party shall have requested an indemnifying party to reimburse the indemnified party for reasonable fees and expenses of counsel for which it is entitled to be reimbursed under this Section 9, such indemnifying party agrees that it shall be liable for any settlement of the nature contemplated by Section 9(a) 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.

(e) Contribution. In order to provide for just and equitable contribution in circumstances in which the indemnification provided for in the foregoing paragraphs of this Section 9 is applicable in accordance with its terms but for any reason is held to be unavailable or insufficient from the Company or an Agent, the Company and such Agent will contribute to the total losses, claims, liabilities, expenses and damages (including any investigative, legal and other expenses reasonably incurred in connection with, and any amount paid in settlement of, any action, suit, investigation or proceeding or any claim asserted, but after deducting any contribution received by the Company from persons other than the Agents, such as persons who control the Company within the meaning of the Securities Act, officers of the Company who signed the Registration Statement and directors of the Company, who may also be liable for contribution) to which the Company and such Agent may be subject in such proportion as shall be appropriate to reflect the relative benefits received by the Company on the one hand and the Agents on the other hand. The relative benefits received by the Company on the one hand and the Agents on the other hand shall be deemed to be in the same proportion as the total Net Proceeds from the sale of the Placement Shares (before deducting expenses) received by the Company bear to the total compensation received by the Agents from the sale of Placement Shares on behalf of the Company. If, but only if, the

allocation provided by the foregoing sentence is not permitted by applicable law, the allocation of contribution shall be made in such proportion as is appropriate to reflect not only the relative benefits referred to in the foregoing sentence but also the relative fault of the Company, on the one hand, and such Agent, on the other hand, with respect to the statements or omission that resulted in such loss, claim, liability, expense or damage, or action, suit, investigation or proceeding in respect thereof, as well as any other relevant equitable considerations with respect to such offering. Such relative fault shall be determined by reference to, among other things, whether the 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 such Agent, the intent of the parties and their relative knowledge, access to information and opportunity to correct or prevent such statement or omission. The Company and each Agent agree that it would not be just and equitable if contributions pursuant to this Section 9(e) were to be determined by *pro rata* allocation or by any other method of allocation that does not take into account the equitable considerations referred to herein. The amount paid or payable by an indemnified party as a result of the loss, claim, liability, expense or damage, or action, suit, investigation or proceeding in respect thereof, referred to above in this Section 9(e) shall be deemed to include, for the purpose of this Section 9(e), any legal or other expenses reasonably incurred by such indemnified party in connection with investigating or defending any such action, suit, investigation, proceeding or claim to the extent consistent with this Section 9. Notwithstanding the foregoing provisions of this Section 9(e), no Agent shall be required to contribute any amount in excess of the commissions received by it under this Agreement and no person found guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) will be entitled to contribution from any person who was not guilty of such fraudulent misrepresentation. For purposes of this Section 9(e), any person who controls a party to this Agreement within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act, any affiliates of an Agent, any partners, members, directors, officers, employees and agents of an Agent and each person that is controlled by or under common control with the Agents will have the same rights to contribution as that party, and each officer of the Company who signed the Registration Statement will have the same rights to contribution as the Company, subject in each case to the provisions hereof. Any party entitled to contribution, promptly after receipt of notice of commencement of any action against such party in respect of which a claim for contribution may be made under this Section 9(e), will notify any such party or parties from whom contribution may be sought, but the omission to so notify will not relieve that party or parties from whom contribution may be sought from any other obligation it or they may have under this Section 9(e) except to the extent that the failure to so notify such other party materially prejudiced the substantive rights or defenses of the party from whom contribution is sought. Except for a settlement entered into pursuant to the last sentence of Section 9(c) hereof or pursuant to Section 9(d) hereof, no party will be liable for contribution with respect to any action or claim settled without its written consent if such consent is required pursuant to Section 9(c) hereof. The Agents' respective obligations to contribute pursuant to this Section 10(e) are several in proportion to the respective number of Placement Shares they have sold hereunder, and not joint.

10. Representations and Agreements to Survive Delivery. The indemnity and contribution agreements contained in Section 9 of this Agreement and all representations and warranties of the Company herein or in certificates delivered pursuant hereto shall survive, as of their respective dates, regardless of (i) any investigation made by or on behalf of the Agents, any controlling persons, or the Company (or any of their respective officers, directors, employees or controlling persons), (ii) delivery and acceptance of the Placement Shares and payment therefor or (iii) any termination of this Agreement.

11. Termination.

(a) An Agent shall have the right with respect to itself, by giving notice as hereinafter specified, at any time to terminate this Agreement if (i) any Material Adverse Effect, or any development that could reasonably be expected to result in a Material Adverse Effect, has occurred that, in the

judgment of such Agent, may materially impair the ability of the Agent to sell the Placement Shares hereunder, (ii) the Company shall have failed, refused or been unable to perform any agreement on its part to be performed hereunder; *provided, however*, in the case of any failure of the Company to deliver (or cause another person to deliver) any certification, opinion or letter required under Section 7(m), Section 7(n), Section 7(o) or Section 7(p), such Agent's right to terminate shall not arise unless such failure to deliver (or cause to be delivered) continues for more than 15 calendar days from the date such delivery was required, (iii) any other condition of the Agent's obligations hereunder is not fulfilled, (iv) any suspension or limitation of trading in the Placement Shares or in securities generally on Nasdaq shall have occurred, (v) a general banking moratorium shall have been declared by any of United States federal or New York authorities, or (vi) there shall have occurred any outbreak or escalation of national or international hostilities or any crisis or calamity, or any change in the United States or international financial markets, or any substantial change or development involving a prospective substantial change in United States or international political, financial or economic conditions that, in the judgment of such Agent, may materially impair the ability of the Agent to sell the Placement Shares hereunder or to enforce contracts for the sale of securities. Any such termination shall be without liability of any party to any other party except that the provisions of Section 7(g), Section 9, Section 10, Section 16 and Section 17 hereof shall remain in full force and effect notwithstanding such termination. If an Agent elects to terminate this Agreement as provided in this Section 11(a), such Agent shall provide the required notice as specified in Section 12. For the avoidance of doubt, the termination by one Agent of its rights and obligations under this Agreement pursuant to this Section 11(a) shall not affect the rights and obligations of the other Agent under this Agreement.

(b) The Company shall have the right, by giving 10 days' prior notice as hereinafter specified, to terminate this Agreement in its sole discretion at any time after the date of this Agreement. Any such termination shall be without liability of any party to any other party except that the provisions of Section 7(g), Section 9, Section 10, Section 11(f), Section 16 and Section 17 hereof shall remain in full force and effect notwithstanding such termination.

(c) Each of the Agents shall have the right, by giving 10 days' prior notice as hereinafter specified, to terminate this Agreement in its sole discretion at any time after the date of this Agreement, with respect to such Agent's rights and obligations under this Agreement. Any such termination shall be without liability of any party to any other party except that the provisions of Section 7(g), Section 9, Section 10, Section 11(f), Section 16 and Section 17 hereof shall remain in full force and effect notwithstanding such termination. For avoidance of doubt, the termination by one Agent of its rights and obligations under this Agreement pursuant to this Section 11(c) shall not affect the rights and obligations of the other Agent under this Agreement.

(d) Unless earlier terminated pursuant to this Section 11, this Agreement shall automatically terminate upon the issuance and sale of all of the Placement Shares through the Agents on the terms and subject to the conditions set forth herein; *provided* that the provisions of Section 7(g), Section 9, Section 10, Section 11(f), Section 16 and Section 17 hereof shall remain in full force and effect notwithstanding such termination.

(e) This Agreement shall remain in full force and effect unless terminated pursuant to Sections 11(a), (b), (c), or (d) above or otherwise by mutual agreement of the parties; *provided, however*, that any such termination by mutual agreement shall in all cases be deemed to provide that Section 7(g), Section 9, Section 10, Section 11(f), Section 16 and Section 17 shall remain in full force and effect.

(f) Any termination of this Agreement shall be effective on the date specified in such notice of termination; *provided, however*, that such termination shall not be effective until the close of business on the date of receipt of such notice by an Agent or the Company, as the case may be. If such termination

shall occur prior to the Settlement Date for any sale of Placement Shares, such Placement Shares shall settle in accordance with the provisions of this Agreement. Upon termination of this Agreement, the Company shall not be required to pay to such Agent any discount or commission with respect to any Placement Shares not otherwise sold by such Agent under this Agreement; *provided, however*, that the Company shall remain obligated to reimburse the Agent's expenses pursuant to Section 7(g).

12. Notices. All notices or other communications required or permitted to be given by any party to any other party pursuant to the terms of this Agreement shall be in writing, unless otherwise specified in this Agreement, and if sent to the Agents, shall be delivered to:

SVB Leerink LLC
1301 Avenue of the Americas, 12th Floor
New York, New York 10019
Attention: Peter M. Fry
E-mail: peter.fry@svbleerink.com

and with a copy (which shall not constitute notice) to:

SVB Leerink LLC
1301 Avenue of the Americas, 12th Floor
New York, New York 10019
Attention: Stuart R. Nayman, Esq.
E-mail: stuart.nayman@svbleerink.com

and:

Cantor Fitzgerald & Co.
499 Park Avenue
New York, New York 10022
Attention: Capital Markets
Facsimile: (212) 307-3730

and:

Cantor Fitzgerald & Co.
499 Park Avenue
New York, New York 10022
Attention: General Counsel
Facsimile: (212) 829-4708

and:

Cooley LLP
55 Hudson Yards
New York, New York 10001-2157
Attention: Daniel I. Goldberg, Esq.
Facsimile: (212) 479-6275

and if to the Company, shall be delivered to:

89bio, Inc.
142 Sansome Street, Second Floor
San Francisco, California 94104
Attention: Chief Executive Officer
E-mail: rohan.palekar@89bio.com

with copies (which shall not constitute notice) to:

Gibson, Dunn Crutcher LLP
555 Mission Street
San Francisco, CA 94105
Attention: Ryan A. Murr
E-mail: RMurr@gibsondunn.com

Each party to this Agreement may change such address for notices by sending to the parties to this Agreement written notice of a new address for such purpose. Each such notice or other communication shall be deemed given (i) when delivered personally on or before 4:30 P.M., New York City time, on a Business Day, or, if such day is not a Business Day, on the next succeeding Business Day, (ii) by Electronic Notice as set forth in the next paragraph, (iii) on the next Business Day after timely delivery to a nationally-recognized overnight courier or (iv) on the Business Day actually received if deposited in the U.S. mail (certified or registered mail, return receipt requested, postage prepaid). For purposes of this Agreement, "**Business Day**" shall mean any day on which the Nasdaq and commercial banks in the City of New York are open for business.

An electronic communication ("**Electronic Notice**") shall be deemed written notice for purposes of this Section 12 if sent to the electronic mail address specified by the receiving party in Section 12. Electronic Notice shall be deemed received at the time the party sending Electronic Notice receives actual acknowledgment of receipt from the person whom the notice is sent, other than via auto-reply. Any party receiving Electronic Notice may request and shall be entitled to receive the notice on paper, in a nonelectronic form ("**Nonelectronic Notice**"), which shall be sent to the requesting party within 10 days of receipt of the written request for Nonelectronic Notice.

13. **Successors and Assigns.** This Agreement shall inure to the benefit of and be binding upon the Company and the Agents and their respective successors and the affiliates, controlling persons, officers, directors and other persons referred to in Section 9 hereof. References to any of the parties contained in this Agreement shall be deemed to include the successors and permitted assigns of each such party. Nothing in this Agreement, express or implied, is intended to confer upon any party other than the parties hereto, the persons referred to in the preceding sentence and their respective successors and permitted assigns any rights, remedies, obligations or liabilities under or by reason of this Agreement, except as expressly provided in this Agreement. Neither party may assign its rights or obligations under this Agreement without the prior written consent of the other party; *provided, however*, that each Agent may assign its rights and obligations hereunder to an affiliate thereof without obtaining the Company's consent, so long as such affiliate is a registered broker-dealer.

14. **Adjustments for Share Splits.** The parties acknowledge and agree that all share-related numbers contained in this Agreement shall be adjusted to take into account any share split, share dividend or similar event effected with respect to the Common Stock.

15. **Entire Agreement; Amendment; Severability; Waiver.** This Agreement (including all schedules (as amended pursuant to this Agreement) and exhibits attached hereto and Placement Notices issued pursuant hereto) constitutes the entire agreement and supersedes all other prior and

contemporaneous agreements and undertakings, both written and oral, among the parties hereto with regard to the subject matter hereof. Neither this Agreement nor any term hereof may be amended except pursuant to a written instrument executed by the Company and each of the Agents; *provided, however*, that **Schedule 2** of this Agreement may be amended by either party from time to time by sending a notice containing a revised **Schedule 2** to the other party in the manner provided in Section 12 and, upon such amendment, all references herein to **Schedule 2** shall automatically be deemed to refer to such amended **Schedule 2**. In the event that any one or more of the provisions contained herein, or the application thereof in any circumstance, is held invalid, illegal or unenforceable as written by a court of competent jurisdiction, then such provision shall be given full force and effect to the fullest possible extent that it is valid, legal and enforceable, and the remainder of the terms and provisions herein shall be construed as if such invalid, illegal or unenforceable term or provision was not contained herein, but only to the extent that giving effect to such provision and the remainder of the terms and provisions hereof shall be in accordance with the intent of the parties as reflected in this Agreement. No implied waiver by a party shall arise in the absence of a waiver in writing signed by such party. No failure or delay in exercising any right, power, or privilege hereunder shall operate as a waiver thereof, nor shall any single or partial exercise thereof preclude any other or further exercise thereof or the exercise of any right, power, or privilege hereunder.

16. GOVERNING LAW AND TIME; WAIVER OF JURY TRIAL. THIS AGREEMENT SHALL BE GOVERNED BY AND CONSTRUED IN ACCORDANCE WITH THE LAWS OF THE STATE OF NEW YORK WITHOUT REGARD TO THE PRINCIPLES OF CONFLICTS OF LAWS. SPECIFIED TIMES OF DAY REFER TO NEW YORK CITY TIME. EACH PARTY 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.

17. Consent to Jurisdiction. Each party hereby irrevocably submits to the exclusive jurisdiction of the state and federal courts sitting in the City of New York, Borough of Manhattan, for the adjudication of any dispute hereunder or in connection with any of the transactions contemplated hereby, and hereby irrevocably waives, and agrees not to assert in any suit, action or proceeding, any claim that it is not personally subject to the jurisdiction of any such court, that such suit, action or proceeding is brought in an inconvenient forum, or that the venue of such suit, action or proceeding is improper. Each party hereby irrevocably waives personal service of process and consents to process being served in any such suit, action or proceeding by mailing a copy (certified or registered mail, return receipt requested) to such party at the address in effect for notices under Section 12 of this Agreement and agrees that such service shall constitute good and sufficient notice of process and notice thereof. Nothing contained herein shall be deemed to limit in any way any right to serve process in any manner permitted by law.

18. Construction.

(a) The section and exhibit headings herein are for convenience only and shall not affect the construction hereof.

(b) Words defined in the singular shall have a comparable meaning when used in the plural, and vice versa.

(c) The words “hereof,” “hereto,” “herein” and “hereunder” and words of similar import, when used in this Agreement, shall refer to this Agreement as a whole and not to any particular provision of this Agreement.

(d) Wherever the word “include,” “includes” or “including” is used in this Agreement, it shall be deemed to be followed by the words “without limitation.”

(e) References herein to any gender shall include each other gender.

(f) References herein to any law, statute, ordinance, code, regulation, rule or other requirement of any governmental authority shall be deemed to refer to such law, statute, ordinance, code, regulation, rule or other requirement of any governmental authority as amended, reenacted, supplemented or superseded in whole or in part and in effect from time to time and also to all rules and regulations promulgated thereunder.

19. Permitted Free Writing Prospectuses. The Company and each of the Agents represents, warrants and agrees that, unless it obtains the prior written consent of the other party, which consent shall not be unreasonably withheld, conditioned or delayed, it has not made and will not make any offer relating to the Placement Shares that would constitute an issuer free writing prospectus, or that would otherwise constitute a free writing prospectus (as defined in Rule 405), required to be filed with the Commission. Any such free writing prospectus consented to by the Agents or by the Company, as the case may be, is hereinafter referred to as a “**Permitted Free Writing Prospectus**.” The Company represents and warrants that it has treated and agrees that it will treat each Permitted Free Writing Prospectus as an issuer free writing prospectus, and that it has complied and will comply in all material respects with the requirements of Rule 433 applicable to any Permitted Free Writing Prospectus, including timely filing with the Commission where required, legending and record keeping.

20. Absence of Fiduciary Relationship. The Company acknowledges and agrees that:

(a) each Agent has been retained to act as sales agent in connection with the sale of the Placement Shares, the Agent has acted at arms’ length and no fiduciary or advisory relationship between the Company or any of its respective affiliates, stockholders (or other equity holders), creditors or employees or any other party, on the one hand, and the Agents, on the other hand, has been or will be created in respect of any of the transactions contemplated by this Agreement, irrespective of whether such Agent has advised or is advising the Company on other matters and no Agent has any duties or obligations to the Company with respect to the transactions contemplated by this Agreement except the obligations expressly set forth herein;

(b) the Company is capable of evaluating, and understanding and understands and accepts, the terms, risks and conditions of the transactions contemplated by this Agreement;

(c) neither the Agents nor their affiliates have provided any legal, accounting, regulatory or tax advice with respect to the transactions contemplated by this Agreement and it has consulted its own legal, accounting, regulatory and tax advisors to the extent it has deemed appropriate;

(d) the Company has been advised and is aware that each Agent and their respective affiliates are engaged in a broad range of transactions which may involve interests that differ from those of the Company and that the Agents and their affiliates have no obligation to disclose such interests and transactions to the Company by virtue of any fiduciary, advisory or agency relationship or otherwise; and

(e) the Company waives, to the fullest extent permitted by law, any claims it may have against an Agent or its affiliates for breach of fiduciary duty or alleged breach of fiduciary duty in connection with the transactions contemplated by this Agreement and agrees that such Agent and its affiliates shall have no liability (whether direct or indirect) to the Company in respect of such a fiduciary claim or to any person asserting a fiduciary duty claim on behalf of or in right of the Company, including stockholders (or other equity holders), creditors or employees of the Company.

21. Recognition of the U.S. Special Resolution Regimes. In the event that an Agent is a Covered Entity and 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.

In the event that such Agent is a Covered Entity and the Agent or a BHC Act Affiliate of the 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 Agreement, (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); (B) “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); (C) “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; and (D) “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.

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

23. Use of Information. The Agents may not provide any information gained in connection with this Agreement and the transactions contemplated by this Agreement, including due diligence, to any third party other than its legal counsel advising it on this Agreement and the transactions contemplated by this Agreement unless expressly approved by the Company in writing.

24. Agents’ Information. As used in this Agreement, “**Agents’ Information**” means solely the following information in the Registration Statement and the Prospectus: the eleventh paragraph under the heading “Plan of Distribution” in the Prospectus Supplement.

All references in this Agreement to the Registration Statement, the Prospectus or any amendment or supplement to any of the foregoing shall be deemed to include the copy filed with the Commission pursuant to EDGAR. All references in this Agreement to financial statements and schedules and other information that is “contained,” “included” or “stated” in the Registration Statement or the Prospectus (and all other references of like import) shall be deemed to mean and include all such financial statements and schedules and other information that is incorporated by reference in the Registration Statement or the Prospectus, as the case may be.

All references in this Agreement to “supplements” to the Prospectus shall include any supplements, “wrappers” or similar materials prepared in connection with any offering, sale or private placement of any Placement Shares by the Agents outside of the United States.

[Remainder of Page Intentionally Blank]

If the foregoing correctly sets forth the understanding among the Company and the Agents, please so indicate in the space provided below for that purpose, whereupon this letter shall constitute a binding agreement between the Company and the Agents.

Very truly yours,

89BIO, INC.

By: /s/ Rohan Palekar

Name: Rohan Palekar

Title: Chief Executive Officer

**ACCEPTED as of the date
first-above written:**

SVB LEERINK LLC

By: /s/ Peter M. Fry

Name: Peter M. Fry

Title: Managing Director, Head of Alternative
Equities

CANTOR FITZGERALD & CO.

By: /s/ Mark Kaplan

Name: Mark Kaplan

Title: Senior Managing Director, Chief
Operating Officer

FORM OF PLACEMENT NOTICE

From: []
[TITLE]
89bio, Inc.
Cc: []
To: [designated agent name] ("**Designated Agent**")
Subject: At the Market Offering—Placement Notice

Ladies and Gentlemen:

Pursuant to the terms and subject to the conditions contained in the Sales Agreement, dated March 25, 2021 (the "**Agreement**"), by and between 89bio, Inc., a Delaware corporation (the "**Company**"), and SVB Leerink LLC ("**SVB Leerink**"), I hereby request on behalf of the Company that SVB Leerink sell up to [] shares of common stock, \$0.0001 par value per share, of the Company (the "**Shares**"), at a minimum market price of \$ per share; *provided* that no more than [] Shares shall be sold in any one Trading Day (as such term is defined in Section 3 of the Agreement)]. Sales should begin [on the date of this Placement Notice] and end on [DATE] [until all Shares that are the subject of this Placement Notice are sold].

Compensation

The Company shall pay the Designated Agent compensation in cash equal to 3.0% of the gross proceeds from the sales of Placement Shares pursuant to the terms of the Sales Agreement of which this **Schedule 3** forms a part.

89BIO, INC.

Debt Securities

Indenture

Dated as of _____, 202

[_____],

as Trustee

CROSS-REFERENCE TABLE

This Cross-Reference Table is not a part of the Indenture

TIA Section	Indenture Section
310(a)(1)	7.10
(a)(2)	7.10
(a)(3)	N.A.
(a)(4)	N.A.
(b)	7.08; 7.10; 12.02
311(a)	7.11
(b)	7.11
(c)	N.A.
312(a)	2.05
(b)	12.03
(c)	12.03
313(a)	7.06
(b)(1)	N.A.
(b)(2)	7.06
(c)	12.02
(d)	7.06
314(a)	4.03; 12.02
(b)	N.A.
(c)(1)	12.04
(c)(2)	12.04
(c)(3)	N.A.
(d)	N.A.
(e)	12.05
315(a)	7.01(b)
(b)	7.05; 12.02
(c)	7.01(a)
(d)	7.01(c)
(e)	6.11
316(a)(last sentence)	12.06
(a)(1)(A)	6.05
(a)(1)(B)	6.04
(a)(2)	N.A.
(b)	6.07
317(a)(1)	6.08
(a)(2)	6.09
(b)d	2.04
318(a)	12.01

N.A. means Not Applicable.

TABLE OF CONTENTS

This Table of Contents is not a part of the Indenture

ARTICLE ONE

DEFINITIONS AND INCORPORATION BY REFERENCE

Section 1.01	Definitions	- 1 -
Section 1.02	Other Definitions	- 3 -
Section 1.03	Incorporation by Reference of Trust Indenture Act	- 4 -
Section 1.04	Rules of Construction	- 4 -

ARTICLE TWO

THE SECURITIES

Section 2.01	Form and Dating	- 5 -
Section 2.02	Execution and Authentication	- 6 -
Section 2.03	Registrar and Paying Agent	- 7 -
Section 2.04	Paying Agent to Hold Money in Trust	- 7 -
Section 2.05	Securityholder Lists	- 7 -
Section 2.06	Transfer and Exchange	- 8 -
Section 2.07	Replacement Securities	- 8 -
Section 2.08	Outstanding Securities	- 8 -
Section 2.09	Temporary Securities	- 9 -
Section 2.10	Cancellation	- 9 -
Section 2.11	Defaulted Interest	- 9 -
Section 2.12	Treasury Securities	- 9 -
Section 2.13	CUSIP/ISIN Numbers	- 9 -
Section 2.14	Deposit of Moneys	- 9 -
Section 2.15	Book-Entry Provisions for Global Security	- 10 -
Section 2.16	No Duty to Monitor	- 11 -

ARTICLE THREE

REDEMPTION

Section 3.01	Notices to Trustee	- 11 -
Section 3.02	Selection of Securities to be Redeemed	- 12 -
Section 3.03	Notice of Redemption	- 12 -
Section 3.04	Effect of Notice of Redemption	- 13 -
Section 3.05	Deposit of Redemption Price	- 13 -
Section 3.06	Securities Redeemed in Part	- 13 -

ARTICLE FOUR

COVENANTS

Section 4.01	Payment of Securities	- 13 -
Section 4.02	Maintenance of Office or Agency	- 13 -
Section 4.03	Reports	- 13 -
Section 4.04	Compliance Certificate	- 14 -
Section 4.05	Waiver of Stay, Extension or Usury Laws	- 14 -

ARTICLE FIVE

SUCCESSOR CORPORATION

Section 5.01	When Company May Merge, etc.	- 14 -
--------------	------------------------------	--------

ARTICLE SIX

DEFAULTS AND REMEDIES

Section 6.01	Events of Default	- 15 -
Section 6.02	Acceleration	- 16 -
Section 6.03	Other Remedies	- 16 -
Section 6.04	Waiver of Existing Defaults	- 16 -
Section 6.05	Control by Majority	- 16 -
Section 6.06	Limitation on Suits	- 16 -
Section 6.07	Rights of Holders to Receive Payment and Convert	- 17 -
Section 6.08	Collection Suit by Trustee	- 17 -
Section 6.09	Trustee May File Proofs of Claim	- 17 -
Section 6.10	Priorities	- 17 -
Section 6.11	Undertaking for Costs	- 18 -

ARTICLE SEVEN

TRUSTEE

Section 7.01	Duties of Trustee	- 18 -
Section 7.02	Rights of Trustee	- 19 -
Section 7.03	Individual Rights of Trustee	- 20 -
Section 7.04	Trustee's Disclaimer	- 20 -
Section 7.05	Notice of Defaults	- 20 -
Section 7.06	Reports by Trustee to Holders	- 20 -
Section 7.07	Compensation and Indemnity	- 21 -
Section 7.08	Replacement of Trustee	- 21 -
Section 7.09	Successor Trustee by Merger, etc.	- 22 -
Section 7.10	Eligibility; Disqualification	- 22 -
Section 7.11	Preferential Collection of Claims Against Company	- 22 -

ARTICLE EIGHT

DISCHARGE OF INDENTURE

Section 8.01	Defeasance upon Deposit of Moneys or Government Obligations	- 22 -
Section 8.02	Survival of the Company's Obligations	- 24 -
Section 8.03	Application of Trust Money	- 24 -
Section 8.04	Repayment to the Company	- 24 -
Section 8.05	Reinstatement	- 25 -

ARTICLE NINE

RESERVED

ARTICLE TEN

AMENDMENTS, SUPPLEMENTS AND WAIVERS

Section 10.01	Without Consent of Holders	- 25 -
Section 10.02	With Consent of Holders	- 26 -
Section 10.03	Compliance with Trust Indenture Act	- 27 -
Section 10.04	Revocation and Effect of Consents	- 27 -
Section 10.05	Notation on or Exchange of Securities	- 27 -
Section 10.06	Trustee to Sign Amendments, etc.	- 27 -

ARTICLE ELEVEN

SECURITIES IN FOREIGN CURRENCIES

Section 11.01	Applicability of Article	- 28 -
---------------	--------------------------	--------

ARTICLE TWELVE

MISCELLANEOUS

Section 12.01	Trust Indenture Act Controls	- 28 -
Section 12.02	Notices	- 28 -
Section 12.03	Communications by Holders with Other Holders	- 29 -
Section 12.04	Certificate and Opinion as to Conditions Precedent	- 29 -
Section 12.05	Statements Required in Certificate or Opinion	- 29 -
Section 12.06	Rules by Trustee and Agents	- 29 -
Section 12.07	Legal Holidays	- 30 -
Section 12.08	Governing Law	- 30 -
Section 12.09	No Adverse Interpretation of Other Agreements	- 30 -
Section 12.10	No Recourse Against Others	- 30 -
Section 12.11	Successors and Assigns	- 30 -
Section 12.12	Duplicate Originals	- 30 -
Section 12.13	Severability	- 30 -
Section 12.14	Waiver of Jury Trial	- 30 -

SIGNATURES

EXHIBIT A – Form of Security

INDENTURE dated as of _____, 202 , (the “**Base Indenture**”), by and among **89BIO, INC.**, a Delaware corporation (the “**Company**”) and [_____], as trustee (the “**Trustee**”).

Each party agrees as follows for the benefit of the other party and for the equal and ratable benefit of the Holders of the Company’s debt securities issued under this Base Indenture:

ARTICLE ONE
DEFINITIONS AND INCORPORATION BY REFERENCE

Section 1.01 Definitions.

“**Affiliate**” means, when used with reference to a specified person, any Person directly or indirectly controlling or controlled by or under direct or indirect common control with the Person specified.

“**Agent**” means any Registrar, Paying Agent or co-Registrar or agent for service of notices and demands.

“**Authorizing Resolution**” means a resolution adopted by the Board of Directors or by an Officer or committee of Officers pursuant to Board delegation authorizing a Series of Securities.

“**Bankruptcy Law**” means Title 11 of the United States Code, as amended, or any similar federal or state law for the relief of debtors.

“**Board of Directors**” means the Board of Directors of the Company or any duly authorized committee thereof.

“**Capital Stock**” means, with respect to any Person, any and all shares, interests, participations or other equivalents (however designated) of or in such Person’s capital stock or other equity interests.

“**Company**” means the party named as such in this Indenture until a successor replaces it pursuant to the Indenture and thereafter means the successor.

“**control**” means, when used with respect to any Person, the power to direct the management and policies of such Person, directly or indirectly, whether through the ownership of voting securities, by contract or otherwise; and the terms “controlling” and “controlled” have meanings correlative to the foregoing.

“**Default**” means any event, act or condition that is, or after notice or the passage of time or both would be, an Event of Default.

“**Definitive Security**” means a certificated Security registered in the name of the Securityholder thereof.

“**Depository**” means, with respect to Securities of any Series which the Company shall determine will be issued in whole or in part as a Global Security, DTC, another clearing agency, or any successor registered as a clearing agency under the Exchange Act, and any other applicable U.S. or foreign statute or regulation, which, in each case, shall be designated by the Company pursuant to Section 2.01.

“**Dollars**” and “**\$**” mean United States Dollars.

“**DTC**” means The Depository Trust Company, New York, New York.

“**Exchange Act**” means the Securities Exchange Act of 1934, as amended.

“**Foreign Currency**” means any currency, currency unit or composite currency, including, without limitation, the Euro, issued by the government of one or more countries other than the United States of America or by any recognized confederation or association of such governments.

“**GAAP**” means generally accepted accounting principles set forth in the accounting standards codification of the Financial Accounting Standards Board or in such other statements by such or any other entity as may be approved by a significant segment of the accounting profession of the United States, as in effect on the date of this Base Indenture.

“**Global Security**” means, with respect to any Series of Securities, a Security executed by the Company and delivered by the Trustee to the Depository or pursuant to the Depository’s instruction, all in accordance with the Indenture, which shall be registered in the name of the Depository or its nominee.

“**Government Obligations**” means securities which are (i) direct obligations of the United States or the other government or governments in the confederation which issued the Foreign Currency in which the principal of or any interest on the Security of the applicable Series shall be payable, in each case for the payment of which its full faith and credit is pledged or (ii) obligations of a Person controlled or supervised by and acting as an agency or instrumentality of the United States or such other government or governments, in each case the payment of which is unconditionally guaranteed as a full faith and credit obligation by the United States or such other government or governments, which, in either case are not callable or redeemable at the option of the issuer or issuers thereof, and shall also include a depositary receipt issued by a bank or trust company as custodian with respect to any such Government Obligations or a specific payment of interest on or principal of any such Government Obligation held by such custodian for the account of the holder of a depositary receipt; *provided* that (except as required by law) such custodian is not authorized to make any deduction from the amount payable to the holder of such depositary receipt from any amount received by the custodian in respect of the Government Obligation or the specific payment of interest on or principal of the Government Obligation evidenced by such depositary receipt.

“**Holder**” or “**Securityholder**” means the Person in whose name a Security is registered on the Registrar’s books.

“**Indenture**” means this Base Indenture as amended or supplemented from time to time, including pursuant to any Authorizing Resolution or supplemental indenture pertaining to any Series, and including, for all purposes of this instrument and any such Authorizing Resolution or supplemental indenture, the provisions of the TIA that are deemed to be a part of and govern this Base Indenture and any such Authorizing Resolution or supplemental indenture, respectively.

“**Issue Date**” means, with respect to any Series of Securities, the date on which the Securities of such Series are originally issued under this Indenture.

“**NYUCC**” means the New York Uniform Commercial Code, as in effect from time to time.

“**Officer**” means the Chairman of the Board, the President, any Vice President, the Treasurer, the Controller or the Secretary of the Company.

“**Officers’ Certificate**” means a certificate signed by two Officers or by an Officer and an Assistant Treasurer or an Assistant Secretary of the Company.

“**Opinion of Counsel**” means a written opinion, in form and substance reasonably satisfactory to the Trustee, from legal counsel. The counsel may be an employee of or counsel to the Company. Each such opinion shall include the statements provided for in Section 12.05 if and to the extent required by the provisions of such Section.

“**Person**” means any individual, corporation, partnership, limited liability company, joint venture, incorporated or unincorporated association, joint stock company, trust, unincorporated organization or government or any agency or political subdivision thereof.

“**principal**” of a debt security means the principal of the security *plus*, when appropriate, the premium, if any, on the security.

“**Property**” of any Person means all types of real, personal, tangible, intangible or mixed property owned by such Person, whether or not included in the most recent consolidated balance sheet of such Person and its Subsidiaries under GAAP.

“**SEC**” means the Securities and Exchange Commission or any successor agency performing the duties now assigned to it under the TIA.

“**Securities**” means any Securities that are issued under this Base Indenture.

“**Securities Act**” means the Securities Act of 1933, as amended.

“**Series**” means a series of Securities established under this Base Indenture.

“**Significant Subsidiary**” means any Subsidiary of the Company which would constitute a “significant subsidiary” as defined in Rule 1-02 of Regulation S-X under the Securities Act and the Exchange Act.

“**Subsidiary**” of any Person means any corporation or other entity of which a majority of the Capital Stock having ordinary voting power to elect a majority of the board of directors of such entity or other persons performing similar functions is at the time directly or indirectly owned or controlled by such Person.

“**TIA**” means the Trust Indenture Act of 1939, as in effect from time to time, except as otherwise provided herein.

“**Trustee**” means the party named as such in this Base Indenture until a successor replaces it pursuant to this Base Indenture and thereafter means the successor serving hereunder; *provided, however*, that if at any time there is more than one such Person, “Trustee” as used with respect to the Securities of any Series shall mean only the Trustee with respect to Securities of that Series.

“**Trust Officer**” means, when used with respect to the Trustee, any officer within the corporate trust department of the Trustee, including any vice president, assistant vice president, assistant secretary, senior associate, associate, trust officer or any other officer of the Trustee who customarily performs functions similar to those performed by the Persons who at the time shall be such officers or to whom any corporate trust matter is referred because of such person’s knowledge of and familiarity with the particular subject and who shall have direct responsibility for the administration of this Indenture.

“**United States**” means the United States of America.

Section 1.02 Other Definitions.

Term	<u>Defined in Section</u>
Agent Members	2.15
Base Indenture	Preamble
Business Day	12.07
Covenant Defeasance	8.01
Custodian	6.01
Event of Default	6.01
Legal Defeasance	8.01
Legal Holiday	12.07
Paying Agent	2.03
Payment Default	6.01
Registrar	2.03
Security Register	2.03
Successor	5.01

Section 1.03 Incorporation by Reference of Trust Indenture Act.

Whenever this Indenture refers to a provision of the TIA, the provision is incorporated by reference in and made a part of this Indenture. The following TIA terms used in this Indenture have the following meanings:

“Commission” means the SEC.

“indenture securities” means the Securities of a particular Series.

“indenture security holder” means a Securityholder.

“indenture to be qualified” means this Indenture.

“indenture trustee” or “institutional trustee” means the Trustee.

“obligor” on the indenture securities means the Company or any other obligor on the Securities of a Series.

All other TIA terms used in this Indenture that are defined by the TIA, defined by TIA reference to another statute or defined by SEC rule have the meanings so assigned to them.

Section 1.04 Rules of Construction.

Unless the context otherwise requires:

- (1) a term has the meaning assigned to it herein;
- (2) an accounting term not otherwise defined has the meaning assigned to it in accordance with GAAP and all accounting determinations shall be made in accordance with GAAP;
- (3) “or” is not exclusive and “including” means “including without limitation”;
- (4) words in the singular include the plural, and in the plural include the singular;
- (5) “herein,” “hereof” and “hereunder,” and other words of similar import, refer to this Indenture as a whole (including any Authorizing Resolution or supplemental indenture relating to the relevant Series) and not to any particular Article, Section or other subdivision;
- (6) all exhibits are incorporated by reference herein and expressly made a part of this Indenture; and
- (7) any transaction or event shall be considered “permitted by” or made “in accordance with” or “in compliance with” this Indenture or any particular provision thereof if such transaction or event is not expressly prohibited by this Indenture or such provision, as the case may be.

ARTICLE TWO
THE SECURITIES

Section 2.01 Form and Dating.

The aggregate principal amount of Securities that may be issued under this Base Indenture is unlimited. The Securities may be issued from time to time in one or more Series. Each Series shall be created by an Authorizing Resolution or a supplemental indenture that establishes the terms of the Series, which may include the following:

- (1) the title of the Series (which shall distinguish the Securities of such Series from all other Securities);
- (2) the aggregate principal amount (or any limit on the aggregate principal amount) of the Series and, if any Securities of a Series are to be issued at a discount from their face amount, the method of computing the accretion of such discount;
- (3) the interest rate or method of calculation of the interest rate;
- (4) the date from which interest will accrue;
- (5) the record dates for interest payable on Securities of the Series;
- (6) the dates when, places where and manner in which principal and interest are payable;
- (7) the Registrar and Paying Agent;
- (8) the terms of any mandatory (including any sinking fund requirements) or optional redemption by the Company;
- (9) the terms of any redemption at the option of Holders;
- (10) the permissible denominations in which Securities of such Series are issuable, if different from \$2,000 and multiples of \$1,000 in excess thereof;
- (11) whether Securities of such Series will be issued in registered or bearer form and the terms of any such forms of Securities;
- (12) whether the Securities of the Series shall be issued in whole or in part in the form of a Global Security or Securities, the terms and conditions, if different from those contained in this Base Indenture, upon which such Global Security or Securities may be exchanged in whole or in part for Definitive Securities; the Depositary for such Global Security or Securities; and the form of any legend or legends, if any, to be borne by any such Global Security or Securities in addition to or in lieu of the legends referred to in Section 2.15;
- (13) the currency or currencies (including any composite currency) in which principal or interest or both may be paid;
- (14) if payments of principal or interest may be made in a currency other than that in which Securities of such Series are denominated, the manner for determining such payments, including the time and manner of determining the exchange rate between the currency in which such Securities are denominated and the currency in which such Securities or any of them may be paid, and any deletions from or modifications of or additions to the terms of this Indenture to provide for or to facilitate the issuance of Securities denominated or payable, at the election of the Company or a Holder thereof or otherwise, in a Foreign Currency;

- (15) provisions for electronic issuance of Securities or issuance of Securities of such Series in uncertificated form;
- (16) any Events of Default, covenants and/or defined terms in addition to or in lieu of those set forth in this Base Indenture;
- (17) whether and upon what terms Securities of such Series may be defeased or discharged if different from the provisions set forth in this Base Indenture;
- (18) the form of the Securities of such Series, which, unless the Authorizing Resolution or supplemental indenture otherwise provides, shall be in the form of Exhibit A;
- (19) any terms that may be required by or advisable under applicable law;
- (20) the percentage of the principal amount of the Securities of such Series which is payable if the maturity of the Securities of such Series is accelerated in the case of Securities issued at a discount from their face amount;
- (21) whether Securities of such Series will or will not have the benefit of guarantees and the Company's Subsidiaries that will be the initial guarantors of such Series and, if applicable, the terms and conditions upon which such guarantees may be subordinated to other indebtedness of the respective guarantors;
- (22) whether the Securities of such Series are senior or subordinated debt securities, and if subordinated debt securities, the terms of such subordination;
- (23) whether the Securities of the Series will be convertible into or exchangeable for other Securities, common shares or other securities of any kind of the Company or another obligor, and, if so, the terms and conditions upon which such Securities will be so convertible or exchangeable, including the initial conversion or exchange price or rate or the method of calculation, how and when the conversion price or exchange ratio may be adjusted, whether conversion or exchange is mandatory, at the option of the holder or at the Company's option, the conversion or exchange period, and any other provision in relation thereto; and
- (24) any other terms in addition to or different from those contained in this Base Indenture applicable to such Series.

All Securities of one Series need not be issued at the same time and, unless otherwise provided, a Series may be reopened for issuances of additional Securities of such Series pursuant to an Authorizing Resolution, an Officers' Certificate or in any indenture supplemental hereto.

The creation and issuance of a Series and the authentication and delivery thereof are not subject to any conditions precedent.

Section 2.02 Execution and Authentication.

One Officer shall sign the Securities for the Company by manual or facsimile signature.

If an Officer whose signature is on a Security no longer holds that office at the time the Trustee authenticates the Security, the Security shall nevertheless be valid.

A Security shall not be valid until the Trustee manually signs the certificate of authentication on the Security. The signature shall be conclusive evidence that the Security has been authenticated under this Base Indenture.

At any time and from time to time after the execution and delivery of this Indenture, the Company may deliver Securities of any series executed by the Company to the Trustee for authentication. Each Security shall be dated the date of its authentication. The Trustee shall authenticate Securities for original issue upon receipt of, and shall be fully protected in relying upon:

- (a) An order to the Trustee signed by an officer of the Company directing the Trustee to authenticate the Securities;
- (b) a copy of the resolution or resolutions of the Board of Directors in or pursuant to which the terms and form of the Securities were established, certified by the Secretary or an Assistant Secretary of the Company to have been duly adopted by the Board of Directors and to be in full force and effect as of the date of such certificate, and if the terms and form of such Securities are established by an Officers' Certificate pursuant to general authorization of the Board of Directors, such Officers' Certificate;
- (c) an Officers' Certificate of the Company delivered in accordance with Section 12.04; and
- (d) an Opinion of Counsel delivered in accordance with Section 12.04.

The Trustee shall have the right to decline to authenticate and deliver any Securities under this Section if the Trustee, being advised by counsel, determines that such action may not lawfully be taken or if the Trustee in good faith shall determine that such action would expose the Trustee to personal liability to existing Holders.

Section 2.03 Registrar and Paying Agent.

The Company shall maintain an office or agency where Securities may be presented for registration of transfer or where Securities of a Series that are convertible or exchangeable may be surrendered for conversion or exchange ("**Registrar**"), an office or agency where Securities may be presented for payment ("**Paying Agent**") and an office or agency where notices and demands to or upon the Company in respect of the Securities and this Indenture may be served. The Registrar shall keep a register of the Securities and of their transfer and exchange (the "**Security Register**"). The Company may have one or more co-Registrars and one or more additional paying agents. The term "Paying Agent" includes any additional paying agent.

The Company shall enter into an appropriate agency agreement with any Agent not a party to this Base Indenture. The agreement shall implement the provisions of this Indenture that relate to such Agent. The Company shall promptly notify the Trustee in writing of the name and address of any such Agent and the Trustee shall have the right to inspect the Securities Register at all reasonable times to obtain copies thereof, and the Trustee shall have the right to rely upon such register as to the names and addresses of the Holders and the principal amounts and certificate numbers thereof. If the Company fails to maintain a Registrar or Paying Agent or fails to give the foregoing notice, the Trustee shall act as such.

The Company initially appoints the Trustee as Registrar and Paying Agent.

Section 2.04 Paying Agent to Hold Money in Trust.

Each Paying Agent shall hold in trust for the benefit of Securityholders and the Trustee all money held by the Paying Agent for the payment of principal of or interest on the Securities, and shall notify the Trustee of any default by the Company in making any such payment. If the Company or a Subsidiary acts as Paying Agent, it shall segregate the money and hold it as a separate trust fund. The Company at any time may require a Paying Agent to pay all money held by it to the Trustee. Upon doing so the Paying Agent shall have no further liability for the money.

Section 2.05 Securityholder Lists.

The Trustee shall preserve in as current a form as is reasonably practicable the most recent list available to it of the names and addresses of Securityholders. If the Trustee is not the Registrar, the Company shall furnish to the Trustee at least five (5) Business Days before each semiannual interest payment date and at such other times as the Trustee may request in writing a list in such form and as of such date as the Trustee may reasonably require of the names and addresses of Securityholders.

Section 2.06 Transfer and Exchange.

Where a Security is presented to the Registrar or a co-Registrar with a request to register a transfer, the Registrar shall register the transfer as requested if the requirements of Section 8-401(a) of the NYUCC are met and the other provisions of this Section 2.06 are satisfied. Where Securities are presented to the Registrar or a co-Registrar with a request to exchange them for an equal principal amount of Securities of other denominations, the Registrar shall make the exchange as requested if the same requirements are met. To permit transfers and exchanges, the Trustee shall authenticate Securities at the Registrar's request. The Registrar need not transfer or exchange any Security selected for redemption or repurchase, except the unredeemed or repurchased part thereof if the Security is redeemed or repurchased in part, or transfer or exchange any Securities for a period of 15 days before a selection of Securities to be redeemed or repurchased. Any exchange or transfer shall be without charge, except that the Company may require payment of a sum sufficient to cover any tax or other governmental charge that may be imposed in relation thereto except in the case of exchanges pursuant to 2.09, 3.06, or 10.05 not involving any transfer.

Any Holder of a Global Security shall, by acceptance of such Global Security, agree that transfers of beneficial interests in such Global Security may be effected only through a book entry system maintained by the Holder of such Global Security (or its agent), and that ownership of a beneficial interest in the Security shall be required to be reflected in a book entry.

Section 2.07 Replacement Securities.

If the Holder of a Security claims that the Security has been lost, destroyed, mutilated or wrongfully taken, the Company shall issue and execute a replacement security and, upon written request of any Officer of the Company, the Trustee shall authenticate such replacement Security, *provided*, in the case of a lost, destroyed or wrongfully taken Security, that the requirements of Section 8-405 of the NYUCC are met. If any such lost, destroyed, mutilated or wrongfully taken Security shall have matured or shall be about to mature, the Company may, instead of issuing a substitute Security therefor, pay such Security without requiring (except in the case of a mutilated Security) the surrender thereof. An indemnity bond must be sufficient in the judgment of the Company and the Trustee to protect the Company, the Trustee and any Agent from any loss which any of them may suffer if a Security is replaced, including the acquisition of such Security by a bona fide purchaser. The Company and the Trustee may charge for its expenses in replacing a Security.

Section 2.08 Outstanding Securities.

Securities outstanding at any time are all Securities authenticated by the Trustee except for those cancelled by it and those described in this Section. A Security does not cease to be outstanding because the Company or one of its Affiliates holds the Security.

If a Security is replaced pursuant to Section 2.07, it ceases to be outstanding unless the Trustee receives proof satisfactory to it that the replaced Security is held by a "protected purchaser" (as such term is defined in the NYUCC).

If the Paying Agent holds on a redemption date, purchase date or maturity date money sufficient to pay Securities payable on that date, then on and after that date such Securities cease to be outstanding and interest on them ceases to accrue.

Subject to the foregoing provisions of this Section, each Security delivered under this Indenture upon registration of transfer of or in exchange for or in lieu of any other Security shall carry the rights to interest accrued and unpaid, and to accrue, which were carried by such other Security.

Section 2.09 Temporary Securities.

Until Definitive Securities are ready for delivery, the Company may prepare and the Trustee shall authenticate temporary Securities. Temporary Securities shall be substantially in the form of Definitive Securities but may have variations that the Company considers appropriate for temporary Securities. Without unreasonable delay, the Company shall prepare and, upon surrender for cancellation of the temporary Security, the Company shall execute and the Trustee shall authenticate Definitive Securities in exchange for temporary Securities. Until so exchanged, the temporary Securities shall in all respects be entitled to the same benefits under this Indenture as Definitive Securities authenticated and delivered hereunder.

Section 2.10 Cancellation.

The Company at any time may deliver Securities to the Trustee for cancellation. The Registrar and Paying Agent shall forward to the Trustee any Securities surrendered to them for registration of transfer, exchange, redemption, purchase or payment. The Trustee and no one else shall cancel and dispose of such cancelled or tendered securities, or retain in accordance with its standard retention policy, all Securities surrendered for registration of transfer, exchange, redemption, purchase, payment or cancellation. Unless the Authorizing Resolution or supplemental indenture so provides, the Company may not issue new Securities to replace Securities that it has previously paid or delivered to the Trustee for cancellation.

Section 2.11 Defaulted Interest.

If the Company defaults in a payment of interest on the Securities of any Series, it shall pay the defaulted interest *plus* any interest payable on the defaulted interest to the persons who are Securityholders of such Series on a subsequent special record date. The Company shall fix such special record date and a payment date which shall be reasonably satisfactory to the Trustee. At least 15 days before such special record date, the Company shall mail to each Securityholder of the relevant Series a notice that states the record date, the payment date and the amount of defaulted interest to be paid. On or before the date such notice is mailed, the Company shall deposit with the Paying Agent money sufficient to pay the amount of defaulted interest to be so paid. The Company may pay defaulted interest in any other lawful manner if, after notice given by the Company to the Trustee of the proposed payment, such manner of payment shall be deemed practicable by the Trustee.

Section 2.12 Treasury Securities.

In determining whether the Holders of the required principal amount of Securities of a Series have concurred in any direction, waiver, consent or notice, Securities owned by the Company or any of its Affiliates shall be considered as though they are not outstanding, except that for the purposes of determining whether the Trustee shall be protected in relying on any such direction, waiver or consent, only Securities which a Trust Officer of the Trustee actually knows are so owned shall be so considered.

Section 2.13 CUSIP/ISIN Numbers.

The Company in issuing the Securities of any Series may use a "CUSIP" and/or "ISIN" or other similar number, and if so, the Trustee shall use the CUSIP and/or ISIN or other similar number in notices of redemption or exchange as a convenience to Holders of such Securities; *provided* that no representation is hereby deemed to be made by the Trustee as to the correctness or accuracy of any such CUSIP and/or ISIN or other similar number printed in the notice or on such Securities, and that reliance may be placed only on the other identification numbers printed on such Securities. The Company shall promptly notify the Trustee of any change in any CUSIP and/or ISIN or other similar number.

Section 2.14 Deposit of Moneys.

Prior to 11:00 a.m., New York City time, on each interest payment date and maturity date with respect to each Series of Securities, the Company shall have deposited with the Paying Agent in immediately available funds money in the applicable currency sufficient to make cash payments due on such interest payment date or maturity date, as the case may be, in a timely manner which permits the Paying Agent to remit payment to the Holders of such Series on such interest payment date or maturity date, as the case may be.

Section 2.15 Book-Entry Provisions for Global Security.

(a) Any Global Security of a Series initially shall (i) be registered in the name of the Depository or the nominee of such Depository, (ii) be delivered to the Trustee as custodian for such Depository and (iii) bear any required legends.

Members of, or participants in, the Depository (“**Agent Members**”) shall have no rights under this Indenture with respect to any Global Security held on their behalf by the Depository, or the Trustee as its custodian, or under the Global Security, and the Depository may be treated by the Company, the Trustee and any agent of the Company or the Trustee as the absolute owner of the Global Security for all purposes whatsoever. Notwithstanding the foregoing, nothing herein shall prevent the Company, the Trustee or any agent of the Company or the Trustee from giving effect to any written certification, proxy or other authorization furnished by the Depository or impair, as between the Depository and its Agent Members, the operation of customary practices governing the exercise of the rights of a Holder of any Security.

(b) Transfers of any Global Security shall be limited to transfers in whole, but not in part, to the Depository, its successors or their respective nominees. Interests of beneficial owners in the Global Security may be transferred or exchanged for Definitive Securities in accordance with the rules and procedures of the Depository. In addition, Definitive Securities shall be transferred to all beneficial owners in exchange for their beneficial interests in a Global Security if (i) the Depository notifies the Company that it is unwilling or unable to continue as Depository for the Global Security or the Depository has ceased to be a “clearing agency” registered under the Exchange Act, and a successor depository is not appointed by the Company within 90 days of such notice, or (ii) the Company elects, at any time in its sole discretion, to discontinue use of the system of book entry transfer through any Depository. Any Security that is held in the form of a Global Security and that is exchanged pursuant to clause (i) above shall be so exchanged in whole and not in part, and any Security that is held in the form of a Global Security and that is exchanged pursuant to clause (ii) above may be exchanged in whole or from time to time in part as directed by the Company.

(c) In connection with any transfer or exchange of a portion of the beneficial interest in any Global Security to beneficial owners pursuant to paragraph (b), the Registrar shall (if one or more Definitive Securities are to be issued) reflect on its books and records the date and a decrease in the principal amount of the Global Security in an amount equal to the principal amount of the beneficial interest in the Global Security to be transferred, and the Company shall execute, and the Trustee shall authenticate and deliver, one or more Definitive Securities of like Series and amount.

(d) In connection with the transfer of an entire Global Security to beneficial owners pursuant to paragraph (b), the Global Security shall be deemed to be surrendered to the Trustee for cancellation, and the Company shall execute, and the Trustee shall authenticate and deliver, to each beneficial owner identified by the Depository in exchange for its beneficial interest in the Global Security, an equal aggregate principal amount of Definitive Securities of the same Series in authorized denominations.

(e) The Holder of any Global Security may grant proxies and otherwise authorize any person, including Agent Members and persons that may hold interests through Agent Members, to take any action which a Holder is entitled to take under this Indenture or the Securities of such Series.

(f) Unless otherwise provided in the Authorizing Resolution or supplemental indenture for a particular Series of Securities, each Global Security of such Series shall bear legends in substantially the following forms:

“THIS GLOBAL SECURITY IS HELD BY THE DEPOSITARY (AS DEFINED IN THE INDENTURE GOVERNING THIS SECURITY) OR ITS NOMINEE IN CUSTODY FOR THE BENEFIT OF THE HOLDERS OF BENEFICIAL INTERESTS HEREIN, AND IS NOT TRANSFERABLE TO ANY PERSON UNDER ANY CIRCUMSTANCES EXCEPT THAT (I) THE TRUSTEE MAY MAKE ANY SUCH NOTATIONS HEREON AS MAY BE REQUIRED PURSUANT TO THE INDENTURE, (II) THIS GLOBAL SECURITY MAY BE EXCHANGED IN WHOLE BUT NOT IN PART PURSUANT TO SECTION 2.06 AND SECTION 2.15 OF THE INDENTURE, (III) THIS GLOBAL SECURITY MAY

BE DELIVERED TO THE TRUSTEE FOR CANCELLATION PURSUANT TO THE INDENTURE AND (IV) THIS GLOBAL SECURITY MAY BE TRANSFERRED TO A SUCCESSOR DEPOSITARY WITH THE PRIOR WRITTEN CONSENT OF THE COMPANY.”

“UNLESS AND UNTIL IT IS EXCHANGED IN WHOLE OR IN PART FOR SECURITIES IN DEFINITIVE FORM, THIS SECURITY MAY NOT BE TRANSFERRED EXCEPT AS A WHOLE BY THE DEPOSITARY TO A NOMINEE OF THE DEPOSITARY OR BY A NOMINEE OF THE DEPOSITARY TO THE DEPOSITARY OR TO ANOTHER NOMINEE OF THE DEPOSITARY OR BY THE DEPOSITARY OR ANY SUCH NOMINEE TO A SUCCESSOR DEPOSITARY OR A NOMINEE OF SUCH SUCCESSOR DEPOSITARY. UNLESS THIS CERTIFICATE IS PRESENTED BY AN AUTHORIZED REPRESENTATIVE OF THE DEPOSITARY TRUST COMPANY, A NEW YORK CORPORATION (“DTC”), TO ISSUER OR ITS AGENT FOR REGISTRATION OF TRANSFER, EXCHANGE, OR PAYMENT, ANY CERTIFICATE ISSUED IS REGISTERED IN THE NAME OF CEDE & CO. OR IN SUCH OTHER NAME AS IS REQUESTED BY AN AUTHORIZED REPRESENTATIVE OF DTC (AND ANY PAYMENT IS MADE TO CEDE & CO. OR TO SUCH OTHER ENTITY AS IS REQUESTED BY AN AUTHORIZED REPRESENTATIVE OF DTC), ANY TRANSFER, PLEDGE, OR OTHER USE HEREOF FOR VALUE OR OTHERWISE BY OR TO ANY PERSON IS WRONGFUL INASMUCH AS THE REGISTERED OWNER HEREOF, CEDE & CO., HAS AN INTEREST HEREIN.”

Section 2.16 No Duty to Monitor.

The Trustee shall have no obligation or duty to monitor, determine or inquire as to compliance with any restrictions on transfer imposed under this Indenture or under applicable law with respect to any transfer of any interest in any Security (including any transfers between or among Agent Members or beneficial owners of interests in any Global Security) other than to require delivery of such certificates and other documentation or evidence as are expressly required by, and to do so if and when expressly required by the terms of, this Indenture, and to examine the same to determine substantial compliance as to form with the express requirements hereof.

Neither the Trustee nor any Agent shall have any responsibility for any actions taken or not taken by the Depositary.

**ARTICLE THREE
REDEMPTION**

Section 3.01 Notices to Trustee.

Securities of a Series that are redeemable prior to maturity shall be redeemable in accordance with their terms and, unless the Authorizing Resolution or supplemental indenture provides otherwise, in accordance with this Article Three.

If the Company wants to redeem Securities pursuant to Paragraph 4 of the Securities, it shall notify the Trustee in writing of the redemption date and the principal amount of Securities to be redeemed. Any such notice may be cancelled at any time prior to notice of such redemption being mailed to Holders. Any such cancelled notice shall be void and of no effect.

If the Company wants to credit any Securities previously redeemed, retired or acquired against any redemption pursuant to Paragraph 5 of the Securities, it shall notify the Trustee of the amount of the credit and it shall deliver any Securities not previously delivered to the Trustee for cancellation with such notice.

The Company shall give each notice provided for in this Section 3.01 at least 30 days before the notice of any such redemption is to be delivered to Holders (unless a shorter notice shall be satisfactory to the Trustee).

Section 3.02 Selection of Securities to be Redeemed.

If fewer than all of the Securities of a Series are to be redeemed, the Trustee (or depository, as applicable) shall select the Securities to be redeemed by lot, pro rata, or such other method the Trustee (or depository, as applicable) considers fair and appropriate and in a manner that complies with applicable requirements of the Depositary. The Trustee (or depository, as applicable) shall make the selection from Securities outstanding not previously called for redemption and shall promptly notify the Company of the serial numbers or other identifying attributes of the Securities so selected. The Trustee (or depository, as applicable) may select for redemption portions of the principal of Securities that have denominations larger than the minimum denomination for the Series. Securities and portions of them it selects shall be in amounts equal to a permissible denomination for the Series. Provisions of this Indenture that apply to Securities called for redemption also apply to portions of Securities called for redemption.

Unless otherwise provided in the Authorizing Resolution or supplemental indenture relating to a Series, if any Security selected for partial redemption is converted into or exchanged for the Company's Capital Stock or other securities, cash or other property in part before termination of the conversion or exchange right with respect to the portion of the Security so selected, the converted portion of such Security shall be deemed (so far as may be) to be the portion selected for redemption. Securities which have been converted or exchanged during a selection of Securities to be redeemed shall be treated by the Trustee as outstanding for the purpose of such selection.

Section 3.03 Notice of Redemption.

At least 30 days but not more than 60 days before a redemption date, the Company shall mail a notice of redemption by first-class mail, postage prepaid, to each Holder of Securities to be redeemed.

The notice shall identify the Securities to be redeemed and shall state:

- (1) the redemption date;
- (2) the redemption price or the formula pursuant to which such price will be calculated;
- (3) if any Security is being redeemed in part, the portion of the principal amount of such Security to be redeemed and that, after the redemption date, upon surrender of such Security, a new Security or Securities in principal amount equal to the unredeemed portion shall be issued upon cancellation of the original Security;
- (4) in the case of Securities of a Series that are convertible or exchangeable into shares of the Company's Capital Stock or other securities, cash or other property, the conversion or exchange price or rate, the date or dates on which the right to convert or exchange the principal of the Securities of such Series to be redeemed will commence or terminate and the place or places where such Securities may be surrendered for conversion or exchange;
- (5) the name and address of the Paying Agent;
- (6) that Securities called for redemption must be surrendered to the Paying Agent to collect the redemption price;
- (7) that interest on Securities called for redemption ceases to accrue on and after the redemption date;
- (8) that the Securities are being redeemed pursuant to the mandatory redemption or the optional redemption provisions, as applicable; and
- (9) the CUSIP number and/or ISIN or other similar number used to identify the Securities, that no representation is hereby deemed to be made by the Trustee as to the correctness or accuracy of any such CUSIP and/or ISIN or other similar number printed in the notice or on such Securities, and that reliance may be placed only on the other identification numbers printed on such Securities.

At the Company's request, the Trustee shall give the notice of redemption in the Company's name and at its expense; *provided, however*, that the Company shall deliver to the Trustee at least 15 days prior to the date on which notice of redemption is to be mailed or such shorter period as may be satisfactory to the Trustee, an Officers' Certificate requesting that the Trustee give such notice and setting forth the information to be stated in such notice as provided in the preceding paragraph.

Section 3.04 Effect of Notice of Redemption.

Once notice of redemption is mailed, Securities called for redemption become due and payable on the redemption date and at the redemption price as set forth in the notice of redemption, which notice, and which obligation to redeem such Securities, may, at the Company's discretion, be subject to one or more conditions precedent as set forth in such notice. Upon surrender to the Paying Agent, such Securities shall be paid at the redemption price, *plus* accrued and unpaid interest to the redemption date.

Section 3.05 Deposit of Redemption Price.

On or before the redemption date, the Company shall deposit with the Paying Agent immediately available funds in the applicable currency sufficient to pay the redemption price of and accrued interest on all Securities to be redeemed on that date.

Section 3.06 Securities Redeemed in Part.

Upon surrender of a Security that is redeemed in part, the Company shall execute and the Trustee shall authenticate for each Holder a new Security of the same Series equal in principal amount to the unredeemed portion of the Security surrendered.

ARTICLE FOUR COVENANTS

Section 4.01 Payment of Securities.

The Company shall pay the principal of, premium, if any, and interest on a Series on the dates, in the currency and in the manner provided in the Securities of the Series. An installment of principal, premium, if any, or interest shall be considered paid on the date it is due if the Paying Agent holds on that date money in the applicable currency designated for and sufficient to pay the installment.

Section 4.02 Maintenance of Office or Agency.

The Company shall maintain the office or agency required under Section 2.03. The Company shall give prior written notice to the Trustee of the location, and any change in the location, of such office or agency. If at any time the Company shall fail to maintain any such required office or agency or shall fail to furnish the Trustee with the address thereof, such presentations, surrenders, notices and demands may be made or served at the address of the Trustee.

Section 4.03 Reports.

At any time when the Company is subject to the reporting requirements of Section 13 or 15(d) of the Exchange Act, the Company shall file with the Trustee, within fifteen (15) days after it actually files the same with the SEC (regardless of when the same is required to be filed with the SEC), each annual, quarterly or current report, information or proxy statement other report which the Company is required to file with the SEC pursuant to Section 13 or 15(d) of the Exchange Act; *provided, however*, that the Company shall not be required to file or deliver to the Trustee any material for which the Company has sought and received, or is seeking, confidential treatment by the SEC; and, *provided further*, that the Company shall be deemed to have filed such information with the Trustee if the Company has filed such information on the SEC's EDGAR system (or any successor system) and such information is publicly available. The Company also shall comply with the other provisions of TIA Section 314(a). The Trustee

does not have the duty to review such information, documents or reports, is not considered to have notice of the content of such information, documents or reports and does not have a duty to verify the accuracy of such information, documents or reports.

Section 4.04 Compliance Certificate.

The Company shall deliver to the Trustee within 120 days after the end of each fiscal year of the Company an Officers' Certificate stating whether or not the signers know of any continuing Default by the Company in performing any of its obligations under this Indenture. If they do know of such a Default, the certificate shall describe the Default. In addition, the Company will notify the Trustee within 5 business days upon the Company's knowledge of a Default.

Section 4.05 Waiver of Stay, Extension or Usury Laws.

The Company covenants (to the extent that it may lawfully do so) that it will not at any time insist upon, plead, or in any manner whatsoever claim or take the benefit or advantage of, any stay or extension law or any usury law or other law that would prohibit or forgive the Company from paying all or any portion of the principal of or interest on the Securities of any Series as contemplated herein, wherever enacted, now or at any time hereafter in force, or which may affect the covenants or the performance of this Indenture; and (to the extent that it may lawfully do so) the Company expressly waives all benefit or advantage of any such law, and covenants that it will not hinder, delay or impede the execution of any power herein granted to the Trustee, but will suffer and permit the execution of every such power as though no such law had been enacted.

ARTICLE FIVE SUCCESSOR CORPORATION

Section 5.01 When Company May Merge, etc.

The Company will not consolidate or merge with or into, or sell, lease, convey or otherwise dispose of all or substantially all of its assets (including by way of liquidation or dissolution), to any Person (in each case other than in a transaction in which the Company is the survivor of a consolidation or merger, or the transferee in a sale, lease, conveyance or other disposition) unless:

- (1) the Person formed by or surviving such consolidation or merger (if other than the Company), or to which such sale, lease, conveyance or other disposition will be made (collectively, the "**Successor**") assumes by supplemental indenture in a form reasonably satisfactory to the Trustee all of the obligations of the Company under the Securities, as the case may be, and the Indenture, and
- (2) immediately after giving effect to such transaction, no Default or Event of Default has occurred and is continuing.

The foregoing provisions shall not apply to a transaction the purpose of which is to change the state of incorporation of the Company.

Upon any such consolidation, merger, sale, lease, conveyance or other disposition, the Successor will be substituted for the Company under the Indenture. The Successor may then exercise every power and right of the Company under this Indenture, and except in the case of a lease, the Company will be released from all of its liabilities and obligations in respect of the Securities and the Indenture. If the Company leases all or substantially all of its assets, the Company will not be released from its obligations to pay the principal of and interest, if any, on the Securities.

**ARTICLE SIX
DEFAULTS AND REMEDIES**

Section 6.01 Events of Default.

An “**Event of Default**” with respect to a Series occurs upon the occurrence of any of the following:

- (1) the failure by the Company to pay interest on any Security of such Series when the same becomes due and payable and the continuance of any such failure for a period of 30 days;
- (2) the failure by the Company to pay the principal of any Security of such Series when the same becomes due and payable at maturity, upon acceleration, redemption or otherwise;
- (3) the failure by the Company to comply with any of its agreements or covenants in, or provisions of, the Securities of such Series or this Indenture (as they relate thereto) and such failure continues for the period and after the notice specified below (except in the case of a default with respect to Article Five (or any other provision specified in the applicable supplemental indenture or Authorizing Resolution), which will constitute an Event of Default with notice but without passage of time);
- (4) the Company or any Subsidiary that is a Significant Subsidiary pursuant to or within the meaning of any Bankruptcy Law:
 - (A) commences a voluntary case,
 - (B) consents to the entry of an order for relief against it in an involuntary case,
 - (C) consents to the appointment of a Custodian of it or for all or substantially all of its Property, or
 - (D) makes a general assignment for the benefit of its creditors;
- (5) a court of competent jurisdiction enters an order or decree under any Bankruptcy Law that:
 - (A) is for relief against the Company or any Subsidiary that is a Significant Subsidiary as debtor in an involuntary case,
 - (B) appoints a Custodian of the Company or any Subsidiary that is a Significant Subsidiary or a Custodian for all or substantially all of the Property of the Company, or
 - (C) orders the liquidation of the Company or any Subsidiary that is a Significant Subsidiary, and the order or decree remains unstayed and in effect for 60 days.

A Default as described in subclause (3) above will not be deemed an Event of Default until the Trustee notifies the Company, or the Holders of at least 25 percent in principal amount of the then outstanding Securities of the applicable Series notify the Company and the Trustee, of the Default and (except in the case of a default with respect to Article Five (or any other provision specified in the applicable supplemental indenture or Authorizing Resolution)) the Company does not cure the Default within 60 days after receipt of the notice. The notice must specify the Default, demand that it be remedied and state that the notice is a “Notice of Default.” If such a Default is cured within such time period, it ceases to exist, without any action by the Trustee or any other Person.

The term “**Custodian**” means any receiver, trustee, assignee, liquidator, custodian or similar official under any Bankruptcy Law.

Section 6.02 Acceleration.

If an Event of Default (other than an Event of Default with respect to the Company resulting from subclause (4) or (5) above), shall have occurred and be continuing under the Indenture, the Trustee by notice to the Company, or the Holders of at least 25 percent in principal amount of the Securities of the applicable Series then outstanding by notice to the Company and the Trustee, may declare all Securities of such Series to be due and payable immediately. Upon such declaration of acceleration, the amounts due and payable on the Securities of such Series will be due and payable immediately. If an Event of Default with respect to the Company specified in subclauses (4) or (5) above occurs, all amounts due and payable on the Securities of such Series will ipso facto become and be immediately due and payable without any declaration, notice or other act on the part of the Trustee and the Company or any Holder.

Holders of a majority in principal amount of the then outstanding Securities of such Series may rescind an acceleration with respect to such Series and its consequence (except an acceleration due to nonpayment of principal or interest) if the rescission would not conflict with any judgment or decree and if all existing Events of Default (other than the non-payment of accelerated principal) have been cured or waived.

No such rescission shall extend to or shall affect any subsequent Event of Default, or shall impair any right or power consequent thereon.

Section 6.03 Other Remedies.

If an Event of Default on a Series occurs and is continuing, the Trustee may pursue any available remedy by proceeding at law or in equity to collect the payment of principal of or interest on the Series or to enforce the performance of any provision in the Securities or this Indenture applicable to the Series.

The Trustee may maintain a proceeding even if it does not possess any of the Securities or does not produce any of them in the proceeding. A delay or omission by the Trustee or any Securityholder in exercising any right or remedy accruing upon an Event of Default shall not impair the right or remedy or constitute a waiver of or acquiescence in the Event of Default. No remedy is exclusive of any other remedy. All available remedies are cumulative.

Section 6.04 Waiver of Existing Defaults.

Subject to Section 10.02, the Holders of a majority in principal amount of the outstanding Securities of a Series on behalf of all the Holders of the Series by notice to the Trustee may waive an existing Default on such Series and its consequences. When a Default is waived, it is cured and stops continuing, and any Event of Default arising therefrom shall be deemed to have been cured; but no such waiver shall extend to any subsequent or other Default or impair any right consequent thereon.

Section 6.05 Control by Majority.

The Holders of a majority in principal amount of the outstanding Securities of a Series may direct the time, method and place of conducting any proceeding for any remedy available to the Trustee or exercising any trust or power conferred on it with respect to such Series. The Trustee, however, may refuse to follow any direction (i) that conflicts with law or this Indenture, (ii) that, subject to Section 7.01, the Trustee determines is unduly prejudicial to the rights of other Securityholders, (iii) that would involve the Trustee in personal liability, if there shall be reasonable grounds for believing that adequate indemnity against such liability is not reasonably assured to it, or (iv) if the Trustee shall not have been provided with indemnity satisfactory to it.

Section 6.06 Limitation on Suits.

A Securityholder of a Series may not pursue any remedy with respect to this Indenture or the Securities of a Series unless:

- (1) the Holder gives to the Trustee written notice of a continuing Event of Default on the Series;

- (2) the Holders of at least 25% in principal amount of the outstanding Securities of the Series make a written request to the Trustee to pursue the remedy;
- (3) such Holder or Holders offer to the Trustee indemnity satisfactory to the Trustee against any loss, liability or expense;
- (4) the Trustee does not comply with the request within 60 days after receipt of the request and the offer of indemnity; and
- (5) no written request inconsistent with such written request shall have been given to the Trustee pursuant to this Section 6.06.

A Securityholder may not use this Indenture to prejudice the rights of another Holder of Securities of the same Series or to obtain a preference or priority over another Holder of Securities of the same Series (it being understood that the Trustee does not have an affirmative duty to ascertain whether or not such actions or forbearances by such Holder are unduly prejudicial to another Holder).

Section 6.07 Rights of Holders to Receive Payment and Convert.

Notwithstanding any other provision of this Indenture, the right of any Holder to receive payment of principal of, premium, if any, and interest on any Security, on or after the respective due dates expressed in the Security, or to bring suit for the enforcement of any such payment on or after such respective dates, is absolute and unconditional and shall not be impaired or affected without the consent of the Holder. Notwithstanding anything to the contrary in this Indenture or the Securities, the right of any Holder of Securities to convert such Securities in accordance with this Indenture, or to bring suit for the enforcement of such right, shall not be impaired or affected without the consent of the Holder.

Section 6.08 Collection Suit by Trustee.

If an Event of Default in payment of interest or principal specified in Section 6.01(1) or (2) occurs and is continuing, the Trustee may recover judgment in its own name and as trustee of an express trust against the Company for the whole amount of principal and interest remaining unpaid.

Section 6.09 Trustee May File Proofs of Claim.

The Trustee may file such proofs of claim and other papers or documents as may be necessary or advisable in order to have the claims of the Trustee (including any claim for the reasonable compensation, expenses, disbursements, and advances of the Trustee, its agents and counsel) and the Securityholders allowed in any judicial proceedings relative to the Company or its creditors or Property, and unless prohibited by applicable law or regulation, may vote on behalf of the Holders in any election of a Custodian, and shall be entitled and empowered to collect and receive any moneys or other Property payable or deliverable on any such claims and to distribute the same and any Custodian in any such judicial proceeding is hereby authorized by each Securityholder to make such payments to the Trustee. Nothing herein shall be deemed to authorize the Trustee to authorize or consent to or vote for or accept or adopt on behalf of any Securityholder any plan of reorganization, arrangement, adjustment or composition affecting the Securities or the rights of any Holder or to authorize the Trustee to vote in respect of the claim of any Securityholder except as aforesaid for the election of the Custodian.

Section 6.10 Priorities.

If the Trustee collects any money pursuant to this Article with respect to Securities of any Series, it shall pay out the money in the following order:

First: to the Trustee for amounts due under Section 7.07;

Second: to Securityholders of the Series for amounts due and unpaid on the Series for principal and interest, ratably, without preference or priority of any kind, according to the amounts due and payable on the Series for principal and interest, respectively; and

Third: to the Company or as a court of competent jurisdiction shall direct.

The Trustee may fix a record date and payment date for any payment to Securityholders pursuant to this Section 6.10.

Section 6.11 Undertaking for Costs.

In any suit for the enforcement of any right or remedy under this Indenture or in any suit against the Trustee for any action taken or omitted by it as Trustee, a court in its discretion may require the filing by any party litigant in the suit of an undertaking to pay the costs of the suit, and the court in its discretion may assess reasonable costs, including reasonable attorneys' fees and expenses, against any party litigant in the suit, having the due regard to the merits and good faith of the claims or defenses made by the party litigant. This Section does not apply to a suit by the Trustee, a suit by a Holder pursuant to Section 6.07 or a suit by Holders of more than 10% in principal amount of the Series.

ARTICLE SEVEN TRUSTEE

Section 7.01 Duties of Trustee.

(a) If an Event of Default has occurred and is continuing with respect to Securities of any Series, the Trustee shall, prior to the receipt of directions from the Holders of a majority in principal amount of the Securities of the Series, exercise its rights and powers and use the same degree of care and skill in their exercise as a prudent man would exercise or use under the circumstances in the conduct of his own affairs.

(b) Except during the continuance of an Event of Default:

(1) The Trustee need perform only those duties that are specifically set forth in this Indenture and no others and no implied covenants or obligations shall be read into this Indenture against the Trustee.

(2) In the absence of bad faith on its part, the Trustee may conclusively rely, as to the truth of the statements and the correctness of the opinions expressed therein, upon certificates or opinions furnished to the Trustee and conforming to the requirements of this Indenture. The Trustee, however, in the case of certificates or opinions specifically required by any provision hereof to be furnished to it, shall examine the certificates and opinions to determine whether or not they conform to the requirements of this Indenture but need not confirm or investigate the accuracy of mathematical calculations or other facts or matters stated therein.

(c) The Trustee may not be relieved from liability for its own negligent action, its own negligent failure to act or its own willful misconduct, except that:

(1) This paragraph does not limit the effect of paragraph (b) of this Section.

(2) The Trustee shall not be liable for any error of judgment made in good faith by a Trust Officer, unless it is proved that the Trustee was negligent in ascertaining the pertinent facts.

(3) The Trustee shall not be liable with respect to any action it takes or omits to take in good faith in accordance with a direction received by it pursuant to Section 6.05 or any other direction of the Holders permitted hereunder.

(d) Every provision of this Indenture that in any way relates to the Trustee is subject to paragraphs (a), (b) and (c) of this Section.

(e) The Trustee may refuse to perform any duty or exercise any right or power unless it receives indemnity satisfactory to it against any loss, liability or expense.

(f) The Trustee shall not be liable for interest on any money received by it except as the Trustee may agree with the Company. Money held in trust by the Trustee need not be segregated from other funds except to the extent required by law.

(g) None of the provisions contained in this Indenture shall require the Trustee to expend or risk its own funds or otherwise incur financial liability in the performance of any of its duties or in the exercise of any of its rights or powers, if there shall be reasonable grounds for believing that the repayment of such funds or adequate indemnity against such liability is not reasonably assured to it.

Section 7.02 Rights of Trustee.

Subject to Section 7.01:

(a) The Trustee may conclusively rely and shall be fully protected in acting or refraining from acting on any document, resolution, certificate, instrument, report, or direction believed by it to be genuine and to have been signed or presented by the proper person. The Trustee need not investigate any fact or matter stated in the document, resolution, certificate, instrument, report, or direction.

(b) Before the Trustee acts or refrains from acting, it may require an Officers' Certificate or an Opinion of Counsel or both, which shall conform to Sections 12.04 and 12.05 hereof and containing such other statements as the Trustee reasonably deems necessary to perform its duties hereunder. The Trustee shall not be liable for any action it takes or omits to take in good faith in reliance on the Officers' Certificate, Opinion of Counsel or any other direction of the Company permitted hereunder.

(c) The Trustee may act through agents and shall not be responsible for the misconduct or negligence of any agent appointed with due care.

(d) The Trustee shall not be liable for any action taken, suffered or omitted by it in good faith and believed by it to be authorized or within the discretion or rights or powers conferred upon it by this Indenture.

(e) The Trustee may consult with counsel of its selection, and the advice of such counsel or any Opinion of Counsel as to matters of law shall be full and complete authorization and protection in respect of any action taken, omitted or suffered by it hereunder in good faith and in accordance with the advice or opinion of such counsel.

(f) Unless otherwise specifically provided in the Indenture, any demand, request, direction or notice from the Company shall be sufficient if signed by an Officer of the Company.

(g) For all purposes under this Indenture, the Trustee shall not be deemed to have notice or knowledge of any Event of Default unless written notice of any Event of Default is received by the Trustee at its address specified in Section 12.02 hereof and such notice references the Securities generally, the Company and this Indenture.

(h) The Trustee shall be under no obligation to exercise any of the rights or powers vested in it by this Indenture at the request or direction of any of the Holders pursuant to this Indenture, unless such Holders shall have offered to the Trustee security or indemnity reasonably satisfactory to the Trustee against the costs, expenses and liabilities which might be incurred by it in compliance with such request or direction.

(i) The Trustee shall not be bound to make any investigation into the facts or matters stated in any resolution, certificate, statement, instrument, opinion, report, notice, request, direction, consent, order, bond, debenture, note, other evidence of indebtedness or other paper or document, but the Trustee, in its discretion, may make such further inquiry or investigation into such facts or matters as it may see fit, and, if the Trustee shall

determine to make such further inquiry or investigation, it shall be entitled to examine the books, records and premises of the Company, personally or by agent or attorney at the sole cost of the Company and shall incur no liability or additional liability of any kind by reason of such inquiry or investigation.

(j) In no event shall the Trustee be responsible or liable for special, indirect, or consequential loss or damage of any kind whatsoever (including, but not limited to, loss of profit) irrespective of whether the Trustee has been advised of the likelihood of such loss or damage and regardless of the form of action.

(k) The rights, privileges, protections, immunities and benefits given to the Trustee, including, without limitation, its right to be indemnified, are extended to, and shall be enforceable by, the Trustee in each of its capacities hereunder, and each agent, custodian and other Person employed to act hereunder.

(l) The Trustee may request that the Company deliver a certificate setting forth the names of individuals and/or titles of officers authorized at such time to take specified actions pursuant to this Indenture.

(m) In no event shall the Trustee be responsible or liable for any failure or delay in the performance of its obligations hereunder arising out of or caused by, directly or indirectly, forces beyond its control, including, without limitation, strikes, work stoppages, accidents, acts of war or terrorism, civil or military disturbances, nuclear or natural catastrophes or acts of God, and interruptions, loss or malfunctions of utilities, communications or computer (software and hardware) services; it being understood that the Trustee shall use reasonable efforts which are consistent with accepted practices in the banking industry to resume performance as soon as practicable under the circumstances.

Section 7.03 Individual Rights of Trustee.

The Trustee in its individual or any other capacity may become the owner or pledgee of Securities and may otherwise deal with the Company or its affiliates with the same rights it would have if it were not Trustee. Any Agent may do the same with like rights. The Trustee, however, must comply with Sections 7.10 and 7.11.

Section 7.04 Trustee's Disclaimer.

The Trustee makes no representation as to the validity or adequacy of this Indenture, the Securities or of any prospectus used to sell the Securities of any Series; it shall not be accountable for the Company's use of the proceeds from the Securities; it shall not be accountable for any money paid to the Company, or upon the Company's direction, if made under and in accordance with any provision of this Indenture; it shall not be responsible for the use or application of any money received by any Paying Agent other than the Trustee; and it shall not be responsible for any statement of the Company in this Indenture or in the Securities other than its certificate of authentication.

Section 7.05 Notice of Defaults.

If a Default on a Series occurs and is continuing and if it is known to the Trustee, the Trustee shall deliver to each Securityholder of the Series notice of the Default (which shall specify any uncured Default known to it) within 90 days after the Trustee obtains such knowledge. Except in the case of a default in payment of principal of or interest on a Series, the Trustee may withhold the notice if and so long as the board of directors of the Trustee, the executive or any trust committee of such directors and/or responsible officers of the Trustee in good faith determine(s) that withholding the notice is in the interests of Holders of the Series.

Section 7.06 Reports by Trustee to Holders.

Within 60 days after each May 15 beginning with the May 15 following the date of this Base Indenture, the Trustee shall mail to each Securityholder a brief report dated as of such May 15 that complies with TIA § 313(a) (but if no event described in TIA § 313(1) through (8) has occurred within the twelve months preceding the reporting date no report in relation thereto need be transmitted). The Trustee also shall comply with TIA § 313(b).

A copy of each report at the time of its mailing to Securityholders shall be delivered to the Company and filed by the Trustee with the SEC and each national securities exchange on which the Securities are listed. The Company agrees to notify the Trustee of each national securities exchange on which the Securities are listed.

Section 7.07 Compensation and Indemnity.

The Company shall pay to the Trustee from time to time reasonable compensation for its services subject to any written agreement between the Trustee and the Company (which compensation shall not be limited by any provision of law in regard to the compensation of a trustee of an express trust). The Company shall reimburse the Trustee upon request for all reasonable out-of-pocket expenses incurred by it. Such expenses shall include the reasonable compensation and expenses of the Trustee's agents and counsel. The Company shall indemnify the Trustee, its officers, directors, employees and agents and hold it harmless against any loss, liability or expense incurred or made by or on behalf of it in connection with the administration of this Indenture or the trust hereunder and its duties hereunder including the costs and expenses of defending itself against or investigating any claim in the premises. The Trustee shall notify the Company promptly of any claim of which it has received written notice and for which it may seek indemnity. The Company need not reimburse any expense or indemnify against any loss or liability incurred by the Trustee through the Trustee's, or its officers', directors', or employees' negligence or willful misconduct.

Unless otherwise provided in any supplemental indenture or Authorizing Resolution relating to any Series, to ensure the Company's payment obligations in this Section, the Trustee shall have a claim prior to the Securities of all Series on all money or Property held or collected by the Trustee, except that held in trust to pay principal of or interest on particular Securities. When the Trustee incurs expenses or renders services in connection with an Event of Default specified in Section 6.01 or in connection with Article Six hereof, the expenses (including the reasonable fees and expenses of its counsel) and the compensation for services in connection therewith are to constitute expenses of administration under any Bankruptcy Law. Section 7.07 shall survive the discharge of the Indenture or resignation of Trustee.

Section 7.08 Replacement of Trustee.

The Trustee may resign with respect to Securities of any or all Series by so notifying the Company. The Holders of a majority in principal amount of the outstanding Securities (or of the relevant Series) may remove the Trustee by so notifying the removed Trustee in writing and may appoint a successor trustee with the Company's consent. Such resignation or removal shall not take effect until the appointment by the Securityholders of the relevant Series or the Company as hereinafter provided of a successor trustee and the acceptance of such appointment by such successor trustee. The Company may remove the Trustee and any Securityholder may petition any court of competent jurisdiction for the removal of the Trustee and the appointment of a successor trustee for any or no reason, including if:

- (1) the Trustee fails to comply with Section 7.10 after written request by the Company or any bona fide Securityholder who has been a Securityholder for at least six months;
- (2) the Trustee is adjudged a bankrupt or an insolvent;
- (3) a receiver or other public officer takes charge of the Trustee or its Property; or
- (4) the Trustee becomes incapable of acting.

If the Trustee resigns or is removed or if a vacancy exists in the office of Trustee for any reason, the Company shall promptly appoint a successor trustee with respect to the Securities of the relevant Series. If a successor trustee does not take office within 30 days after the retiring Trustee resigns or is removed, the retiring Trustee at the expense of the Company, the Company or any Holder may petition any court of competent jurisdiction for the appointment of a successor trustee.

A successor trustee shall deliver a written acceptance of its appointment to the retiring Trustee and to the Company. Immediately after that, the retiring Trustee shall, upon payment of its charges hereunder, transfer all

Property held by it as Trustee to the successor trustee, the resignation or removal of the retiring Trustee shall become effective, and the successor trustee shall have all the rights, powers and duties of the Trustee under this Indenture. A successor trustee shall mail notice of its succession to each Securityholder.

Section 7.09 Successor Trustee by Merger, etc.

If the Trustee consolidates with, merges with or into or converts into, or transfers all or substantially all of its corporate trust business to, another corporation, the successor corporation without any further act shall be the successor trustee.

Section 7.10 Eligibility; Disqualification.

This Indenture shall always have a Trustee who satisfies the requirements of TIA § 310(a)(1). The Trustee shall have a combined capital and surplus of at least \$10,000,000 as set forth in its most recent published annual report of condition. The Trustee shall comply with TIA § 310(b).

Section 7.11 Preferential Collection of Claims Against Company.

The Trustee shall comply with TIA § 311(a), excluding any creditor relationship listed in TIA § 311(b). A Trustee who has resigned or been removed shall be subject to TIA § 311(a) to the extent indicated therein.

**ARTICLE EIGHT
DISCHARGE OF INDENTURE**

Section 8.01 Defeasance upon Deposit of Moneys or Government Obligations.

(a) The Company may, at its option and at any time, elect to have either paragraph (b) or paragraph (c) below be applied to the outstanding Securities of any Series upon compliance with the applicable conditions set forth in paragraph (d).

(b) Upon the Company's exercise under paragraph (a) of the option applicable to this paragraph (b) with respect to any Series, the Company shall be deemed to have been released and discharged from its obligations with respect to the outstanding Securities of the Series on the date the applicable conditions set forth below are satisfied (hereinafter, "**Legal Defeasance**"). For this purpose, such Legal Defeasance means that the Company shall be deemed to have paid and discharged the entire indebtedness represented by the outstanding Securities of a Series, which shall thereafter be deemed to be "outstanding" only for the purposes of the Sections and matters under this Indenture referred to in (i) and (ii) below, and the Company shall be deemed to have satisfied all its other obligations under such Securities and this Indenture insofar as such Securities are concerned, except for the following which shall survive until otherwise terminated or discharged hereunder: (i) the rights of Holders of outstanding Securities of a Series to receive solely from the trust fund described in paragraph (d) below and as more fully set forth in such paragraph, payments in respect of the principal of and interest on such Securities when such payments are due and (ii) obligations listed in Section 8.02, subject to compliance with this Section 8.01. The Company may exercise its option under this paragraph (b) with respect to a Series notwithstanding the prior exercise of its option under paragraph (c) below with respect to the Securities of the Series.

(c) Upon the Company's exercise under paragraph (a) of the option applicable to this paragraph (c) with respect to a Series, the Company shall be released and discharged from the obligations under any covenant contained in Article Five, Sections 4.03 and any other covenant contained in or referenced in the Authorizing Resolution or supplemental indenture relating to such Series (to the extent such release and discharge shall not be prohibited thereby), on and after the date the conditions set forth below are satisfied (hereinafter, "**Covenant Defeasance**"), and the Securities of such Series shall thereafter be deemed to be not "outstanding" for the purpose of any direction, waiver, consent or declaration or act of Holders (and the consequences of any thereof) in connection with such covenants, but shall continue to be deemed "outstanding" for all other purposes hereunder. For this purpose, such Covenant Defeasance means that, with respect to the outstanding Securities of a Series, the Company may omit to comply with and shall have no liability in respect of any term, condition or limitation set forth in the

covenants described in the preceding sentence, whether directly or indirectly, by reason of any reference elsewhere herein to any such covenant or by reason of any reference in any such covenant to any other provision herein or in any other document and such omission to comply shall not constitute a Default or an Event of Default under Section 6.01(3) or otherwise, but, except as specified above, the remainder of this Indenture and such Securities shall be unaffected thereby.

(d) The following shall be the conditions to application of either paragraph (b) or paragraph (c) above to the outstanding Securities of the applicable Series:

(1) The Company shall have irrevocably deposited in trust with the Trustee (or another qualifying trustee), pursuant to an irrevocable trust and security agreement in form and substance reasonably satisfactory to the Trustee, money in the currency in which the Securities of such Series are payable or Government Obligations or a combination thereof in such amounts and at such times as are sufficient, in the opinion of a nationally recognized firm of independent public accountants, to pay the principal of and interest on the outstanding Securities of such Series to maturity or redemption; *provided, however*, that the Trustee (or other qualifying trustee) shall have received an irrevocable written order from the Company instructing the Trustee (or other qualifying trustee) to apply such money or the proceeds of such Government Obligations to said payments with respect to the Securities of such Series to maturity or redemption;

(2) No Default or Event of Default (other than a Default or Event of Default resulting from non-compliance with any covenant from which the Company is released upon effectiveness of such Legal Defeasance or Covenant Defeasance pursuant to paragraph (b) or (c) hereof, as applicable) shall have occurred and be continuing on the date of such deposit or result therefrom;

(3) (i) In the event the Company elects paragraph (b) hereof, the Company shall deliver to the Trustee an Opinion of Counsel in the United States, in form and substance reasonably satisfactory to the Trustee, to the effect that (A) the Company has received from, or there has been published by, the Internal Revenue Service a ruling or (B) since the Issue Date pertaining to such Series, there has been a change in the applicable federal income tax law, in either case to the effect that, and based thereon such Opinion of Counsel shall state that, or (ii) in the event the Company elects paragraph (c) hereof, the Company shall deliver to the Trustee an Opinion of Counsel in the United States, in form and substance reasonably satisfactory to the Trustee, to the effect that, in the case of clauses (i) and (ii), and subject to customary assumptions and exclusions, Holders of the Securities of such Series will not recognize income, gain or loss for federal income tax purposes as a result of such deposit and the defeasance contemplated hereby and will be subject to federal income tax in the same amounts and in the same manner and at the same times as would have been the case if such deposit and defeasance had not occurred;

(4) The Company shall have delivered to the Trustee an Officers' Certificate, stating that the deposit under clause (1) was not made by the Company with the intent of preferring the Holders of the Securities of such Series over any other creditors of the Company or with the intent of defeating, hindering, delaying or defrauding any other creditors of the Company or others;

(5) The Company shall have delivered to the Trustee an Opinion of Counsel (subject to customary assumptions and qualifications) to the effect that, assuming no intervening bankruptcy of the Company between the date of deposit and the 91st day following the deposit and assuming that no Holder is an "insider" of the Company under applicable Bankruptcy Law, after the 91st day following the deposit, the trust funds shall not be subject to the effect of Section 547 of the United States Bankruptcy Code or any analogous New York State law provision; and

(6) The Company has delivered to the Trustee an Officers' Certificate and an Opinion of Counsel, each stating that all conditions precedent specified herein relating to the defeasance contemplated by this Section 8.01 have been complied with.

In the event all or any portion of the Securities of a Series are to be redeemed through such irrevocable trust, the Company must make arrangements satisfactory to the Trustee, at the time of such deposit, for the giving of the notice of such redemption or redemptions by the Trustee in the name and at the expense of the Company.

(e) In addition to the Company's rights above under this Section 8.01, the Company may terminate all of its obligations under this Indenture with respect to a Series, when:

(1) All Securities of such Series theretofore authenticated and delivered (other than Securities which have been destroyed, lost or stolen and which have been replaced or paid as provided in Section 2.07 and Securities for whose payment money has theretofore been deposited in trust or segregated and held in trust by the Company and thereafter repaid to the Company or discharged from such trust) have been delivered to the Trustee for cancellation or all such Securities not theretofore delivered to the Trustee for cancellation (A) have become due and payable, (B) will become due and payable at maturity within one year or (C) are to be called for redemption within one year under arrangements satisfactory to the Trustee for the giving of notice of redemption by the Trustee in the name, and at the expense, of the Company, and in each such case, the Company has irrevocably deposited or caused to be deposited with the Trustee (or another qualifying trustee) as trust funds in trust solely for that purpose an amount of money in the currency in which the Securities of such Series are payable or Government Obligations or a combination thereof sufficient, in the opinion of a nationally recognized firm of independent public accountants, to pay and discharge the entire indebtedness on the Securities of such Series not theretofore delivered to the Trustee for cancellation, for principal of and interest on the Securities of such Series, on the date of such deposit or to the maturity or redemption date, as the case may be;

(2) The Company has paid or caused to be paid all other sums payable hereunder by the Company;

(3) The Company has delivered irrevocable instructions to the Trustee (or such other qualifying trustee), to apply the deposited money toward the payment of the Securities of such Series at maturity or redemption, as the case may be; and

(4) The Company has delivered to the Trustee an Officers' Certificate and an Opinion of Counsel, stating that all conditions precedent specified in this Section 8.01(e) relating to the satisfaction and discharge of this Indenture have been complied with.

Section 8.02 Survival of the Company's Obligations.

Notwithstanding the satisfaction and discharge of this Indenture under Section 8.01, the Company's obligations in Paragraph 8 of the Securities and Sections 2.03 through 2.07, 4.01, 7.07, 7.08, 8.04 and 8.05, however, shall survive until the Securities of an applicable Series are no longer outstanding. Thereafter, the Company's obligations in Paragraph 8 of the Securities of such Series and Sections 7.07, 8.04 and 8.05 shall survive (as they relate to such Series) such satisfaction and discharge.

Section 8.03 Application of Trust Money.

The Trustee shall hold in trust money or Government Obligations deposited with it pursuant to Section 8.01. It shall apply the deposited money and the money from Government Obligations in accordance with this Indenture to the payment of principal of and interest on the Securities of the defeased Series.

Section 8.04 Repayment to the Company.

The Trustee and the Paying Agent shall promptly pay to the Company upon request any excess money or securities held by them at any time. The Trustee and the Paying Agent shall pay to the Company upon request any money held by them for the payment of principal or interest that remains unclaimed for two years, *provided, however*, that the Trustee or such Paying Agent, before being required to make any such repayment, may at the expense of the Company cause to be published once in a newspaper of general circulation in the City of New York or mail to each such Holder notice that such money remains unclaimed and that, after a date specified therein, which shall not be less than 30 days from the date of such publication or mailing, any unclaimed balance of such money then remaining will be repaid to the Company. After payment to the Company, Securityholders entitled to the money must look to the Company for payment as general creditors unless applicable abandoned property law designates another person and all liability of the Trustee or such Paying Agent with respect to such money shall cease.

Section 8.05 Reinstatement.

If the Trustee is unable to apply any money or Government Obligations in accordance with Section 8.01 by reason of any legal proceeding or by reason of any order or judgment of any court or governmental authority enjoining, restraining or otherwise prohibiting such application, the Company's obligations under this Indenture and the Securities relating to the Series shall be revived and reinstated as though no deposit had occurred pursuant to Section 8.01 until such time as the Trustee is permitted to apply all such money or Government Obligations in accordance with Section 8.01; *provided, however*, that (a) if the Company has made any payment of interest on or principal of any Securities of the Series because of the reinstatement of its obligations hereunder, the Company shall be subrogated to the rights of the Holders of such Securities to receive such payment from the money or Government Obligations held by the Trustee and (b) unless otherwise required by any legal proceeding or any order or judgment of any court or governmental authority, the Trustee shall return all such money or Government Obligations to the Company promptly after receiving a written request therefor at any time, if such reinstatement of the Company's obligations has occurred and continues to be in effect.

ARTICLE NINE RESERVED

ARTICLE TEN AMENDMENTS, SUPPLEMENTS AND WAIVERS

Section 10.01 Without Consent of Holders.

The Company and the Trustee may amend or supplement this Indenture or the Securities of a Series without notice to or consent of any Securityholder of such Series:

- (1) to cure any ambiguity, omission, defect or inconsistency;
- (2) to comply with Article Five;
- (3) to provide that specific provisions of this Indenture shall not apply to a Series not previously issued or to make a change to specific provisions of this Indenture that only applies to any Series not previously issued or to additional Securities of a Series not previously issued;
- (4) to create a Series and establish its terms;
- (5) to provide for uncertificated Securities in addition to or in place of certificated Securities;
- (6) to release a guarantor in respect of any Series which, in accordance with the terms of this Indenture applicable to the particular Series, ceases to be liable in respect of its guarantee;
- (7) to add a guarantor in respect of any Series;
- (8) to secure any Series;
- (9) to add to the covenants of the Company for the benefit of the Holders or surrender any right or power conferred upon the Company;
- (10) to appoint a successor trustee with respect to the Securities;
- (11) to comply with requirements of the SEC in order to effect or maintain the qualification of this Indenture under the TIA;
- (12) to make any other change that does not adversely affect the rights of Securityholders; and

(13) to conform the provisions of the Indenture to the final offering memorandum or prospectus in respect of any Series.

After an amendment under this Section 10.01 becomes effective, the Company shall mail notice of such amendment to the Securityholders.

Section 10.02 With Consent of Holders.

The Company and the Trustee may amend or supplement any provision of the Securities of a Series or of this Indenture relating to such Series without notice to any Securityholder of such Series but with the written consent of the Holders of at least a majority in principal amount of the outstanding Securities of such Series (including consents obtained in connection with a purchase of, or tender offer or exchange offer for, Securities of such Series). Each such Series shall vote as a separate class. The Holders of a majority in principal amount of the outstanding Securities of any Series may waive compliance by the Company with any provision of the Securities of such Series or of this Indenture relating to such Series without notice to any Securityholder (including any waiver granted in connection with a purchase of, or tender offer or exchange offer for, Securities of such Series). Without the consent of each Holder of a Security the terms of which are directly amended, supplemented or waived, however, an amendment, supplement or waiver, including a waiver pursuant to Section 6.04, may not (with respect to any Securities of such Series held by a non-consenting Holder):

(1) reduce the amount of Securities of the relevant Series whose Holders must consent to an amendment, supplement or waiver;

(2) reduce the rate of or extend the time for payment of interest, including defaulted interest, on any Security;

(3) reduce the principal of or extend the fixed maturity of any Security or alter the provisions (including related definitions) with respect to redemption of any Security pursuant to Article Three hereof or with respect to any obligations on the part of the Company to offer to purchase or to redeem Securities of a Series pursuant to the Authorizing Resolution or supplemental indenture pertaining to such Series in a manner adverse to Holders;

(4) make any change that adversely affects any right of a Holder to convert or exchange any Security into or for shares of the Company's Capital Stock or other securities, cash or other property in accordance with the terms of such Security;

(5) modify the ranking or priority of the Securities of the relevant Series or any guarantee thereof;

(6) release any guarantor of any Series from any of its obligations under its guarantee or this Indenture otherwise than in accordance with the terms of this Indenture;

(7) make any change in Sections 6.04, 6.07 or this Section 10.02, except to increase the percentage required for modification or waiver or to provide for consent of each affected Holder of Securities of such Series;

(8) waive a continuing Default or Event of Default in the payment of the principal of or interest on any Security; or

(9) make any Security payable at a place or in money other than that stated in the Security, or impair the right of any Securityholder to bring suit as permitted by Section 6.07.

An amendment of a provision included solely for the benefit of one or more Series does not affect the interests of Securityholders of any other Series.

It shall not be necessary for the consent of the Holders under this Section to approve the particular form of any proposed supplement, but it shall be sufficient if such consent approves the substance thereof.

Section 10.03 Compliance with Trust Indenture Act.

Every amendment to or supplement of this Indenture or any Securities shall comply with the TIA as then in effect.

Section 10.04 Revocation and Effect of Consents.

A consent to an amendment, supplement or waiver by a Holder shall bind the Holder and every subsequent Holder of a Security or portion of a Security that evidences the same debt as the consenting Holder's Security, even if notation of the consent is not made on any Security. Unless otherwise provided in the consent or the consent solicitation statement or other document describing the terms of the consent, any Holder or subsequent Holder may revoke the consent as to its Security or portion of a Security. Any revocation of a consent by the Holder of a Security or any such subsequent Holder shall be effective only if the Trustee receives the notice of revocation before the date on which the Trustee receives an Officers' Certificate from the Company certifying that the requisite number of consents have been received.

The Company may, but shall not be obligated to, fix a record date for the purpose of determining the Holders of Securities of any Series entitled to consent to any amendment, supplement or waiver, which record date shall be at least 10 days prior to the first solicitation of such consent. If a record date is fixed, and if Holders otherwise have a right to revoke their consent under the consent or the consent solicitation statement or other document describing the terms of the consent, then notwithstanding the second to last sentence of the immediately preceding paragraph, those Persons who were Holders at such record date (or their duly designated proxies), and only those Persons, shall be entitled to revoke any consent previously given, whether or not such Persons continue to be Holders after such record date. No such consent shall be valid or effective for more than 90 days after such record date.

An amendment, supplement or waiver with respect to a Series becomes effective upon the (i) receipt by the Company or the Trustee of the requisite consents, (ii) satisfaction of any conditions to effectiveness as set forth in this Indenture or any indenture supplemental hereto containing such amendment, supplement or waiver and (iii) execution of such amendment, supplement or waiver (or the related supplemental indenture) by the Company and the Trustee. After an amendment, supplement or waiver with respect to a Series becomes effective, it shall bind every Holder of such Series, unless it makes a change described in any of clauses (1) through (9) of Section 10.02, in which case, the amendment, supplement or waiver shall bind a Holder of a Security of such Series only if it has consented to such amendment, supplement or waiver and every subsequent Holder of a Security or portion of a Security that evidences the same debt as the consenting Holder's Security; *provided* that no such waiver shall impair or affect the right of any Holder to receive payment of principal of and interest on a Security, on or after the respective due dates expressed in such Security, or to bring suit for the enforcement of any such payment on or after such respective dates without the consent of such Holder.

Section 10.05 Notation on or Exchange of Securities.

If an amendment, supplement or waiver changes the terms of a Security, the Company may require the Holder of the Security to deliver it to the Trustee, at which time the Trustee shall place an appropriate notation on the Security about the changed terms and return it to the Holder. Alternatively, if the Company or the Trustee so determines, the Company in exchange for the Security shall issue and the Trustee shall authenticate a new Security that reflects the changed terms.

Section 10.06 Trustee to Sign Amendments, etc.

Subject to Section 7.02(b), the Trustee shall sign any amendment, supplement or waiver authorized pursuant to this Article if the amendment, supplement or waiver does not adversely affect the rights, duties, liabilities or immunities of the Trustee. If it does, the Trustee may but need not sign it. In signing or refusing to sign such amendment or supplemental indenture, the Trustee shall be provided with and shall be fully protected in relying upon, an Officers' Certificate and an Opinion of Counsel as conclusive evidence that such amendment, supplement or waiver is authorized or permitted by this Indenture, and (solely with respect to such Opinion of Counsel) that it will be valid and binding upon the Company and enforceable in accordance with its terms.

**ARTICLE ELEVEN
SECURITIES IN FOREIGN CURRENCIES**

Section 11.01 Applicability of Article.

Whenever this Indenture provides for (i) any action by, or the determination of any of the rights of, Holders of Securities of any Series in which not all of such Securities are denominated in the same currency, or (ii) any distribution to Holders of Securities, in the absence of any provision to the contrary pursuant to this Indenture or the Securities of any particular Series, any amount in respect of any Security denominated in a Foreign Currency shall be treated for any such action or distribution as that amount of Dollars that could be obtained for such amount on such reasonable basis of exchange and as of the record date with respect to Securities of such Series (if any) for such action, determination of rights or distribution (or, if there shall be no applicable record date, such other date reasonably proximate to the date of such action, determination of rights or distribution) as the Company may specify in a written notice to the Trustee or, in the absence of such written notice, as the Trustee may determine.

**ARTICLE TWELVE
MISCELLANEOUS**

Section 12.01 Trust Indenture Act Controls.

If any provision of this Indenture limits, qualifies or conflicts with another provision which is required to be included in this Indenture by the TIA, the required provision shall control.

Section 12.02 Notices.

Any order, consent, notice or communication shall be sufficiently given if in writing and delivered in person or mailed by first class mail, postage prepaid, addressed as follows:

if to the Company:

[]

if to the Trustee:

[]

The Company or the Trustee by notice to the other may designate additional or different addresses for subsequent notices or communications.

Any notice or communication mailed to a Securityholder shall be mailed to him by first class mail at his address as it appears on the registration books of the Registrar and shall be sufficiently given to him if so mailed within the time prescribed.

Failure to mail a notice or communication to a Securityholder or any defect in it shall not affect its sufficiency with respect to other Securityholders. If a notice or communication is mailed in the manner provided above, it is duly given, whether or not the addressee receives it except that notice to the Trustee shall only be effective upon receipt thereof by the Trustee.

If the Company mails notice or communications to the Securityholders, it shall mail a copy to the Trustee at the same time.

In addition to the foregoing, the Trustee agrees to accept and act upon notice, instructions or directions pursuant to this Indenture sent by unsecured e-mail, facsimile transmission or other similar unsecured electronic methods. If the party elects to give the Trustee e-mail or facsimile instructions (or instructions by a similar electronic method) and the Trustee in its discretion elects to act upon such instructions, the Trustee's understanding of such instructions shall be deemed controlling. The Trustee shall not be liable for any losses, costs or expenses arising

directly or indirectly from the Trustee's reliance upon and compliance with such instructions notwithstanding such instructions conflict or are inconsistent with a subsequent written instruction. The party providing electronic instructions agrees to assume all risks arising out of the use of such electronic methods to submit instructions and directions to the Trustee, including without limitation the risk of the Trustee acting on unauthorized instructions, and the risk of interception and misuse by third parties.

Section 12.03 Communications by Holders with Other Holders.

Securityholders may communicate pursuant to TIA § 312(b) with other Securityholders with respect to their rights under this Indenture or the Securities. The Company, the Trustee, the Registrar and anyone else shall have the protection of TIA § 312(c).

Section 12.04 Certificate and Opinion as to Conditions Precedent.

Upon any request or application by the Company to the Trustee to take any action under this Indenture, the Company shall furnish to the Trustee:

- (1) an Officers' Certificate (which shall include the statements set forth in Section 12.05) stating that, in the opinion of the signers, all conditions precedent, if any, provided for in this Indenture relating to the proposed action have been complied with; and
- (2) an Opinion of Counsel (which shall include the statements set forth in Section 12.05) stating that, in the opinion of such counsel, all such conditions precedent, if any, provided for in this Indenture relating to the proposed action or inaction, have been complied with.

Any Officers' Certificate may be based, and may state that it is so based, insofar as it relates to legal matters, upon a certificate or opinion of, or representations by, internal or external legal counsel. Any Opinion of Counsel may be based, and may state that it is so based, insofar as it relates to factual matters, upon a certificate or opinion of, or representations by, an Officer or Officers of the Company or any guarantor stating that the information with respect to such factual matters is known to the Company or such guarantor, unless such counsel knows that the certificate or opinion or representations with respect to such matters are erroneous.

Section 12.05 Statements Required in Certificate or Opinion.

Each certificate or opinion with respect to compliance with a condition or covenant provided for in this Indenture shall include:

- (1) a statement that the person making such certificate or opinion has read such covenant or condition;
- (2) a brief statement as to the nature and scope of the examination or investigation upon which the statements or opinions contained in such certificate or opinion are based;
- (3) a statement that, in the opinion of such person, he has made such examination or investigation as is necessary to enable him to express an informed opinion as to whether or not such covenant or condition has been complied with; and
- (4) a statement as to whether or not, in the opinion of such person, such condition or covenant has been complied with.

Section 12.06 Rules by Trustee and Agents.

The Trustee may make reasonable rules for action by or a meeting of Securityholders. The Registrar or Paying Agent may make reasonable rules for its functions.

Section 12.07 Legal Holidays.

A “**Legal Holiday**” is a Saturday, a Sunday, a legal holiday or a day on which banking institutions in New York, New York are not required to be open. If a payment date is a Legal Holiday, payment may be made on the next succeeding day that is not a Legal Holiday, and no interest shall accrue for the intervening period. If this Indenture provides for a time period that ends or requires performance of any non-payment obligation by a day that is not a Business Day, then such time period shall instead be deemed to end on, and such obligation shall instead be performed by, the next succeeding Business Day. A “**Business Day**” is any day other than a Legal Holiday.

Section 12.08 Governing Law.

The laws of the State of New York shall govern this Indenture and the Securities of each Series.

Section 12.09 No Adverse Interpretation of Other Agreements.

This Indenture may not be used to interpret another indenture, loan or debt agreement of the Company or a Subsidiary. Any such indenture, loan or debt agreement may not be used to interpret this Indenture.

Section 12.10 No Recourse Against Others.

All liability described in Paragraph 12 of the Securities of any director, officer, employee or stockholder, as such, of the Company is, to the fullest extent permitted by applicable law, waived and released.

Section 12.11 Successors and Assigns.

All covenants and agreements of the Company in this Indenture and the Securities shall bind its successors and assigns. All agreements of the Trustee in this Indenture shall bind its successors and assigns.

Section 12.12 Duplicate Originals.

The parties may sign any number of copies of this Indenture. Each signed copy shall be an original, but all of them together represent the same agreement.

Section 12.13 Severability.

In case any one or more of the provisions contained in this Indenture or in the Securities of a Series shall for any reason be held to be invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceability shall not affect any other provisions of this Indenture or of such Securities.

Section 12.14 Waiver of Jury Trial.

EACH OF THE COMPANY AND THE TRUSTEE 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 INDENTURE, THE SECURITIES OR THE TRANSACTION CONTEMPLATED HEREBY.

SIGNATURES

IN WITNESS WHEREOF, the parties have caused this Indenture to be duly executed, all as of the date first above written.

89BIO, INC.

By: _____
Name: _____
Title: _____

[_____], as Trustee

By: _____
Name: _____
Title: _____

EXHIBIT A

No. CUSIP/ISIN No.:

[Title of Security]

89BIO, INC.
a Delaware corporation

promises to pay to or registered assigns the principal sum of [Dollars]* on .

Interest Payment Dates: and

Record Dates: and

Authenticated: Dated:

89BIO, INC.

By: _____
Name:
Title:

[],

as Trustee, certifies that this is one of the Securities referred to in the within mentioned Indenture.

By: _____
Authorized Signatory

* Or other currency. Insert corresponding provisions on reverse side of Security in respect of foreign currency denomination or interest payment requirement.

[Title of Security]

89BIO, INC., a Delaware corporation (together with its successors and assigns, the “**Company**”), issued this Security under an Indenture dated as of (as amended, modified or supplemented from time to time in accordance therewith, the “**Base Indenture**”), as supplemented by the Supplemental Indenture dated as of (the “**Supplemental Indenture**” and together with the Base Indenture, the “**Indenture**”), by and among the Company and [], as trustee (in such capacity, the “**Trustee**”), to which reference is hereby made for a statement of the respective rights, obligations, duties and immunities thereunder of the Company, the Trustee and the Holders and of the terms upon which the Securities are, and are to be, authorized and delivered. All terms used in this Security that are defined in the Indenture shall have the meanings assigned to them therein.

1. Interest. The Company promises to pay interest on the principal amount of this Security at the rate per annum shown above. The Company will pay interest semiannually on [] and [] of each year, commencing [], until the principal is paid or made available for payment. Interest on the Securities will accrue from the most recent date to which interest has been paid or duly provided for or, if no interest has been paid, from []. Interest will be computed on the basis of a 360-day year of twelve 30-day months.

2. Method of Payment. The Company will pay interest on the Securities (except defaulted interest, if any, which will be paid on such special payment date to Holders of record on such special record date as may be fixed by the Company) to the persons who are registered Holders of Securities at the close of business on the [Insert record dates] immediately preceding the interest payment date. Holders must surrender Securities to a Paying Agent to collect principal payments. The Company will pay principal and interest in money of [Insert applicable country or currency] that at the time of payment is legal tender for payment of public and private debts.

3. Paying Agent and Registrar. Initially, the Trustee will act as Paying Agent and Registrar. The Company may change or appoint any Paying Agent, Registrar or co-Registrar without notice. The Company or any of its Subsidiaries or any of their Affiliates may act as Paying Agent, Registrar or co-Registrar.

4. Optional Redemption.¹ The Company may redeem the Securities at any time on or after [], in whole or in part, at the following redemption prices (expressed as a percentage of their principal amount) together with interest accrued and unpaid to the date fixed for redemption:

If redeemed during the twelve-month period commencing on and ending on in each of the following years	Percentage

[Insert provisions relating to redemption at option of Holders, if any]

Notice of redemption will be mailed at least 30 days but not more than 60 days before the redemption date to each Holder of Securities to be redeemed at its registered address. Securities in denominations larger than []² may be redeemed in part. On and after the redemption date interest ceases to accrue on Securities or portions of them called for redemption, *provided* that if the Company shall default in the payment of such Securities at the redemption price together with accrued interest, interest shall continue to accrue at the rate borne by the Securities.

5. Mandatory Redemption.³ The Company shall redeem []% of the aggregate principal amount of Securities originally issued under the Indenture on each of [], which redemptions are calculated to retire []% of the Securities originally issued prior to maturity. Such redemptions shall be made at a redemption price equal

¹ If applicable.

² Insert applicable denominations and multiples.

³ If applicable.

to 100% of the principal amount thereof, together with accrued interest to the redemption date. The Company may reduce the principal amount of Securities to be redeemed pursuant to this Paragraph 5 by the principal amount of any Securities previously redeemed, retired or acquired, otherwise than pursuant to this Paragraph 5, that the Company has delivered to the Trustee for cancellation and not previously credited to the Company's obligations under this Paragraph 5. Each such Security shall be received and credited for such purpose by the Trustee at the redemption price and the amount of such mandatory redemption payment shall be reduced accordingly.

6. Denominations, Transfer, Exchange. The Securities are in registered form only without coupons in denominations of _____⁴ and integral multiples of _____ in excess thereof.⁵ A Holder may transfer or exchange Securities by presentation of such Securities to the Registrar or a co-Registrar with a request to register the transfer or to exchange them for an equal principal amount of Securities of other denominations. The Registrar may require a Holder, among other things, to furnish appropriate endorsements and transfer documents and to pay any taxes and fees required by law or permitted by the Indenture. The Registrar need not transfer or exchange any Security selected for redemption or purchase, except the unredeemed or unpurchased part thereof if the Security is redeemed or purchased in part, or transfer or exchange any Securities for a period of 15 days before a selection of Securities to be redeemed or purchased.

7. Persons Deemed Owners. The registered Holder of this Security shall be treated as the owner of it for all purposes.

8. Unclaimed Money. Subject to any applicable abandoned property law, the Trustee and the Paying Agent shall pay to the Company upon written request any money held by them for the payment of principal or interest that remains unclaimed for two years, and thereafter, Holders entitled to the money must look to the Company for payment as general creditors.

9. Amendment, Supplement, Waiver. Subject to certain exceptions, the Indenture or the Securities of a Series may be amended or supplemented with the consent of the Holders of at least a majority in principal amount of the outstanding Securities of such Series and any past default or compliance with any provision relating to any Series of the Securities may be waived in a particular instance with the consent of the Holders of a majority in principal amount of the outstanding Securities of such Series.⁶ Without the consent of any Securityholder, the Company and the Trustee may amend or supplement the Indenture or the Securities in certain respects as specified in the Indenture.

10. Successor Corporation. When a successor corporation assumes all the obligations of its predecessor under the Securities and the Indenture, the predecessor corporation will be released from those obligations.

11. Trustee Dealings With Company. Subject to certain limitations imposed by the TIA, the Trustee under the Indenture, in its individual or any other capacity, may make loans to, accept deposits from, and perform services for the Company or its affiliates, and may otherwise deal with the Company or its affiliates, as if it were not Trustee, including owning or pledging the Securities.

12. No Recourse Against Others. A director, officer, employee or stockholder, as such, of the Company shall not have any liability for any obligations of the Company under the Securities or the Indenture or for any claim based on, in respect of or by reason of, such obligations or their creation. Each Holder by accepting a Security waives and releases all such liability. The waiver and release are part of the consideration for the issue of the Securities. The waiver may not be effective to waive liabilities under the federal securities laws.

13. Discharge of Indenture. The Indenture contains certain provisions pertaining to defeasance and discharge, which provisions shall for all purposes have the same effect as if set forth herein.

⁴ Insert applicable denominations and multiples.

⁵ Insert applicable denominations and multiples.

⁶ If different terms apply, insert a brief summary thereof.

14. Authentication. This Security shall not be valid until an authorized signatory of the Trustee signs the certificate of authentication on the other side of this Security.

15. Abbreviations. Customary abbreviations may be used in the name of a Holder or an assignee, such as: TEN COM (= tenants in common), TEN ENT (= tenants by the entireties), JT TEN (= joint tenants with right of survivorship and not as tenants in common), CUST (= custodian), and U/G/M/A (= Uniform Gift to Minors Act).

16. GOVERNING LAW. THIS SECURITY SHALL BE GOVERNED BY, AND CONSTRUED IN ACCORDANCE WITH, THE LAWS OF THE STATE OF NEW YORK.

17. CUSIP and ISIN Numbers. Pursuant to a recommendation promulgated by the Committee on Uniform Security Identification Procedures, the Company has caused CUSIP and ISIN numbers to be printed on the Securities and has directed the Trustee to use CUSIP and ISIN numbers in notices of repurchase as a convenience to Holders. No representation is made as to the accuracy of such numbers either as printed on the Securities or as contained in any notice of repurchase and reliance may be placed only on the other identification numbers placed thereon.

18. Copies. The Company will furnish to any Holder upon written request and without charge a copy of the Indenture and the applicable Authorizing Resolution or supplemental indenture. Requests may be made to: 89bio, Inc., [], Attention: [Chief Financial Officer].

ASSIGNMENT FORM

If you the Holder want to assign this Security, fill in the form below:

I or we assign and transfer this Security to (insert assignee's social security or tax ID number)

(Print or type assignee's name, address, and zip code)

and irrevocably appoint agent to transfer this Security on the books of the Company. The agent may substitute another to act for him.

Date: _____

Your signature
(Sign exactly as your name appears on the other side
of this Security)

Signature Guarantee:

GIBSON DUNN

Gibson, Dunn & Crutcher LLP
555 Mission Street
San Francisco, CA 94105-0921
Tel 415.393.8200
www.gibsondunn.com

Client: 26925-00001

March 25, 2021

89bio, Inc.
142 Sansome Street, 2nd Floor
San Francisco, CA 94104

Re: 89bio, Inc.
Registration Statement on Form S-3

Ladies and Gentlemen:

We have acted as counsel to 89bio, Inc., a Delaware corporation (the "Company"), in connection with the preparation and filing with the Securities and Exchange Commission (the "Commission") of a Registration Statement on Form S-3 (the "Registration Statement") under the Securities Act of 1933, as amended (the "Securities Act"), relating to the registration under the Securities Act and the proposed issuance and sale from time to time pursuant to Rule 415 under the Securities Act, together or separately and in one or more series (if applicable) of:

- (i) the Company's debt securities (the "Debt Securities");
- (ii) shares of the Company's common stock, par value \$0.001 per share (the "Common Stock");
- (iii) shares of the Company's preferred stock, par value \$0.001 per share (the "Preferred Stock");
- (iv) warrants for the purchase of Debt Securities, Common Stock, and Preferred Stock (the "Warrants"); and
- (v) units of the Company comprised of any combination of Debt Securities, Common Stock, Preferred Stock, and Warrants (the "Units").

The Debt Securities, Common Stock, Preferred Stock, Warrants, and Units are collectively referred to herein as the "Securities." The Debt Securities are to be issued under an indenture substantially in the form attached to the Registration Statement (the "Base Indenture").

In arriving at the opinions expressed below, we have examined originals, or copies certified or otherwise identified to our satisfaction as being true and complete copies of the originals, of the form of the Base Indenture, forms of the Debt Securities, specimen Common Stock and such other documents, corporate records, certificates of officers of the Company and of public officials and other instruments as we have deemed necessary

or advisable to enable us to render these opinions. In our examination, we have assumed the genuineness of all signatures, the legal capacity and competency of all natural persons, the authenticity of all documents submitted to us as originals and the conformity to original documents of all documents submitted to us as copies. As to any facts material to these opinions, we have relied to the extent we deemed appropriate and without independent investigation upon statements and representations of officers and other representatives of the Company and others.

We have assumed without independent investigation that:

- (i) at the time any Securities are sold pursuant to the Registration Statement (the “Relevant Time”), the Registration Statement and any supplements and amendments thereto (including post-effective amendments) will be effective and will comply with all applicable laws;
- (ii) at the Relevant Time, a prospectus supplement will have been prepared and filed with the Commission describing the Securities offered thereby and all related documentation and will comply with all applicable laws;
- (iii) all Securities will be issued and sold in the manner stated in the Registration Statement and the applicable prospectus supplement;
- (iv) at the Relevant Time, all corporate or other action required to be taken by the Company to duly authorize each proposed issuance of Securities and any related documentation (including (i) the due reservation of any shares of Common Stock or Preferred Stock for issuance upon exercise, conversion or exchange of any Securities for Common Stock or Preferred Stock (a “Convertible Security”), and (ii) the execution (in the case of certificated Securities), delivery and performance of the Securities and any related documentation referred to in paragraphs 1 through 5 below) shall have been duly completed and shall remain in full force and effect;
- (v) upon issuance of any Common Stock or Preferred Stock, including upon exercise, conversion or exchange of any Convertible Security, the total number of shares of Common Stock or Preferred Stock issued and outstanding will not exceed the total number of shares of Common Stock or Preferred Stock, as applicable, that the Company is then authorized to issue under its certificate of incorporation and other relevant documents;
- (vi) in the case of Debt Securities, at the Relevant Time, the relevant trustee shall have been qualified under the Trust Indenture Act of 1939, as amended (the “TIA”), a Statement of Eligibility of the Trustee on Form T-1 shall have been properly filed with the Commission and the relevant Base Indenture shall have been duly executed and delivered by the Company and all other parties thereto and duly qualified under the TIA;

(vii) at the Relevant Time, a definitive purchase, underwriting or similar agreement and any other necessary agreement with respect to any Securities offered or issued will have been duly authorized by all necessary corporate or other action of the Company duly executed and delivered by the Company or any Trust and the other parties thereto.

Based on the foregoing and in reliance thereon, and subject to the assumptions, exceptions, qualifications and limitations set forth herein, we are of the opinion that:

1. With respect to any Debt Securities when:

- a. the terms and conditions of such Debt Securities have been duly established by supplemental indenture or officers' certificate in accordance with the terms and conditions of the relevant Base Indenture,
- b. any such supplemental indenture has been duly executed and delivered by the Company and the relevant trustee (together with the relevant Base Indenture, the "Indenture"), and
- c. such Debt Securities have been executed (in the case of certificated Debt Securities), delivered and authenticated in accordance with the terms of the applicable Indenture and issued and sold for the consideration set forth in the applicable definitive purchase, underwriting or similar agreement,

such Debt Securities will be legal, valid and binding obligations of the Company, enforceable against the Company in accordance with their respective terms.

2. With respect to any shares of Preferred Stock, when:

- a. the certificate of designations relating to such Preferred Stock (the "Certificate of Designations") has been duly executed and filed with the Office of the Secretary of State of the State of Delaware,
- b. such shares have been issued either (i) in accordance with the applicable definitive purchase, underwriting or similar agreement and for the consideration therefor provided for therein or (ii) upon exercise, conversion or exchange of any Convertible Security and for any additional consideration specified in such Convertible Security or the instrument governing such Convertible Security providing for such conversion or exercise, which consideration (including any consideration paid for such Convertible Security), on a per-share basis, shall in either event not be less than the par value of the Preferred Stock, and

- c. any such Convertible Security was previously validly issued and is fully paid and non-assessable (in the case of an equity Security) or is a legal, valid and binding obligation of the Company, enforceable against the Company in accordance with its terms, such shares of Preferred Stock will be validly issued, fully paid and non-assessable.
3. With respect to shares of Common Stock, when:
 - a. such shares of Common Stock have been duly executed (in the case of certificated shares) and delivered either (i) in accordance with the applicable definitive purchase, underwriting or similar agreement for the consideration provided for therein, or (ii) upon conversion or exercise of any Convertible Security, in accordance with the terms of such Convertible Security or the instrument governing such Convertible Security providing for such conversion or exercise, and for any additional consideration specified therein, which consideration (including any consideration paid for such Convertible Security), on a per-share basis, shall in either event not be less than the par value of the Common Stock, and
 - b. any such Convertible Security was previously validly issued and is fully paid and non-assessable (in the case of an equity Security) or is a legal, valid and binding obligation of the Company, enforceable against the Company in accordance with its terms, such shares of Common Stock will be validly issued, fully paid and non-assessable.
4. With respect to any Warrants, when:
 - a. the warrant agreement relating to such Warrants (the "Warrant Agreement"), if any, has been duly executed and delivered by the Company and each other party thereto,
 - b. the terms of the Warrants have been established in accordance with the Warrant Agreement, if any, and the applicable definitive purchase, underwriting or similar agreement, and
 - c. the Warrants have been duly executed (in the case of certificated Warrants) and delivered in accordance with the Warrant Agreement, if any, and the applicable definitive purchase, underwriting or similar agreement for the consideration provided for therein,

such Warrants will be legal, valid and binding obligations of the Company, enforceable against the Company in accordance with their terms.

5. With respect to any Units, when:

- a. the unit agreement relating to the Units (the "Unit Agreement"), if any, has been duly executed and delivered by the Company and each other party thereto,
- b. the terms of the Units have been duly established in accordance with the Unit Agreement, if any, and the applicable definitive purchase, underwriting or similar agreement, and
- c. the Units have been duly executed (in the case of certificated Units) and delivered in accordance with the Unit Agreement, if any, and the applicable definitive purchase, underwriting or similar agreement for the consideration provided for therein,

the Units will be legal, valid and binding obligations of the Company, enforceable against the Company in accordance with their terms.

The opinions expressed above are subject to the following exceptions, qualifications, limitations and assumptions:

A. We render no opinion herein as to matters involving the laws of any jurisdiction other than the State of New York and the United States of America and, for purposes of paragraphs 2 and 3 above, the Delaware General Corporation Law. We are not admitted to practice in the State of Delaware; however, we are generally familiar with the Delaware General Corporation Law as currently in effect and have made such inquiries as we consider necessary to render the opinions contained in paragraphs 2 and 3 above. This opinion is limited to the effect of the current state of the laws of the State of New York, the United States of America and, to the limited extent set forth above, the laws of the State of Delaware and the facts as they currently exist. We assume no obligation to revise or supplement this opinion in the event of future changes in such laws or the interpretations thereof or such facts.

B. The opinions above with respect to the Indenture, the Debt Securities, the Warrants, the Warrant Agreement, the Units and the Unit Agreement (collectively, the "Documents") are each subject to (i) the effect of any bankruptcy, insolvency, reorganization, moratorium, arrangement or similar laws affecting the rights and remedies of creditors' generally, including without limitation the effect of statutory or other laws regarding fraudulent transfers or preferential transfers and (ii) general

principles of equity, including without limitation concepts of materiality, reasonableness, good faith and fair dealing and the possible unavailability of specific performance, injunctive relief or other equitable remedies regardless of whether enforceability is considered in a proceeding in equity or at law.

C. We express no opinion regarding the effectiveness of (i) any waiver of stay, extension or usury laws (ii) provisions relating to indemnification, exculpation or contribution, to the extent such provisions may be held unenforceable as contrary to public policy or federal or state securities laws (iii) any provision in any Document waiving the right to object to venue in any court; (iv) any agreement to submit to the jurisdiction of any Federal court; or (v) any waiver of the right to jury trial.

D. To the extent relevant to our opinions in paragraphs 4 and 5 and not covered by our opinions in paragraphs 1, 2, and 3, we have assumed that any securities underlying, comprising or issuable upon exchange, conversion or exercise of any Warrants or Units are validly issued, fully paid and non-assessable (in the case of an equity security) or a legal, valid and binding obligation of the issuer thereof, enforceable against such issuer in accordance with its terms.

You have informed us that you intend to issue Securities from time to time on a delayed or continuous basis, and we understand that prior to issuing any Securities pursuant to the Registration Statement (i) you will advise us in writing of the terms thereof, and (ii) you will afford us an opportunity to (x) review the operative documents pursuant to which such Securities are to be issued or sold (including the applicable offering documents), and (y) file such supplement or amendment to this opinion (if any) as we may reasonably consider necessary or appropriate.

We consent to the filing of this opinion as an exhibit to the Registration Statement, and we further consent to the use of our name under the caption "Legal Matters" in the Registration Statement and the prospectus that forms a part thereof. In giving these consents, we do not thereby admit that we are within the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations of the Commission promulgated thereunder.

Very truly yours,

/s/ Gibson, Dunn & Crutcher LLP

GIBSON DUNN

Gibson, Dunn & Crutcher LLP

555 Mission Street
San Francisco, CA 94105-0921
Tel 415.393.8200
www.gibsondunn.com

Client: 26925-00001

March 25, 2021

89bio, Inc.
142 Sansome Street, 2nd Floor
San Francisco, CA 94104Re: *89bio, Inc.*
Registration Statement on Form S-3

Ladies and Gentlemen:

We have examined the Registration Statement on Form S-3 (the "Registration Statement") of 89bio, Inc., a Delaware corporation (the "Company"), filed with the Securities and Exchange Commission (the "Commission") pursuant to the Securities Act of 1933, as amended (the "Securities Act"), and the prospectus supplement thereto dated March 25, 2021 (the "Prospectus Supplement"), in connection with the offering by the Company of up to \$75,000,000 of the Company's common stock, par value \$0.001 per share (the "Shares").

In arriving at the opinion expressed below, we have examined originals, or copies certified or otherwise identified to our satisfaction as being true and complete copies of the originals, of specimen Common Stock certificates and such other documents, corporate records, certificates of officers of the Company and of public officials and other instruments as we have deemed necessary or advisable to enable us to render the opinions set forth below. In our examination, we have assumed without independent investigation the genuineness of all signatures, the legal capacity and competency of all natural persons, the authenticity of all documents submitted to us as originals and the conformity to original documents of all documents submitted to us as copies. We have further assumed that all offers and sales of the Shares will comply with the minimum offering price and pricing formula set forth in the authorization of the offering and sale of the Shares by the Company's Board of Directors.

Based upon the foregoing, and subject to the assumptions, exceptions, qualifications and limitations set forth herein, we are of the opinion that the Shares, when issued against payment therefor as set forth in the Registration Statement and the Prospectus Supplement thereto, will be validly issued, fully paid and non-assessable.

We consent to the filing of this opinion as an exhibit to the Registration Statement, and we further consent to the use of our name under the caption "Legal Matters" in the Registration Statement and the Prospectus Supplement. In giving these consents, we do not thereby admit that we are within the category of persons whose consent is required under Section 7 of the Securities Act or the Rules and Regulations of the Commission.

Very truly yours,

/s/ Gibson, Dunn & Crutcher LLP

Consent of Independent Registered Public Accounting Firm

The Board of Directors
89bio, Inc.:

We consent to the use of our report dated March 24, 2021, with respect to the consolidated balance sheet of 89bio, Inc. as of December 31, 2020, the related consolidated statements of operations and comprehensive loss, stockholders' equity, and cash flows for the year ended December 31, 2020, and the related notes, incorporated herein by reference and to the reference to our firm under the heading "Experts" in the prospectus.

/s/ KPMG LLP

San Francisco, California
March 24, 2021

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in this Registration Statement on Form S-3 of our report dated March 18, 2020 relating to the financial statements of 89bio, Inc., appearing in the Annual Report on Form 10-K of 89bio, Inc. for the year ended December 31, 2020. We also consent to the reference to us under the heading “Experts” in such Registration Statement.

/s/ Deloitte & Touche LLP
San Francisco, California
March 24, 2021