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

**Amendment No. 1
FORM S-1
REGISTRATION STATEMENT**
Under
THE SECURITIES ACT OF 1933

SYNOLOGIC, 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)

26-1824804
(I.R.S. Employer
Identification Number)

**301 Binney St., Suite 402
Cambridge, MA 02142
(617) 401-9975**

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

Aoife Brennan, MB, BCh, BAO, MMSc
President and Chief Executive Officer
Synlogic, Inc.

**301 Binney Street, Suite 402
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Approximate date of commencement of proposed sale to public: As soon as practicable after this Registration Statement is declared effective.

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, 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 post-effective amendment filed pursuant to Rule 462(d) 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.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or 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.

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.

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 which 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 the Registration Statement shall become effective on such date as the Commission, acting pursuant to said Section 8(a), may determine.

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

SUBJECT TO COMPLETION, DATED SEPTEMBER 26, 2023

PRELIMINARY PROSPECTUS

SYNLOGIC, INC.

66,889,632 Shares of Common Stock Pre-Funded Warrants to Purchase Shares of Common Stock Common Warrants to Purchase up to 66,889,632 Shares of Common Stock

We are offering 66,889,632 shares of our common stock and warrants to purchase up to an aggregate of 66,889,632 shares of our common stock (and the shares of common stock that are issuable from time to time upon exercise of the common warrants). We are also offering to each purchaser whose purchase of shares of common stock in this offering would otherwise result in the purchaser, together with its affiliates and certain related parties, beneficially owning more than 4.99% (or, at the election of the purchaser, 9.99%) of our outstanding common stock immediately following the consummation of this offering, the opportunity to purchase, if the purchaser so chooses, pre-funded warrants, in lieu of shares of common stock. Each pre-funded warrant will be exercisable for one share of our common stock. The purchase price of each pre-funded warrant will equal the price per share at which the shares of common stock are being sold to the public in this offering, minus \$0.001, and the exercise price of each pre-funded warrant will be \$0.001 per share. The pre-funded warrants will be immediately exercisable and may be exercised at any time until all of the pre-funded warrants are exercised in full. This prospectus also relates to the shares of common stock issuable upon exercise of any pre-funded warrants sold in this offering. For each pre-funded warrant we sell, the number of shares of common stock we are offering will be decreased on a one-for-one basis. Each share of common stock and pre-funded warrant is being sold together with a warrant to purchase one (1) share of our common stock, at an exercise price of \$ per share (representing 100% of the public offering price). Because we will issue a common warrant to purchase one (1) share of our common stock for each share of our common stock and for each pre-funded warrant sold in this offering, the number of common warrants sold in this offering will not change as a result of a change in the mix of the shares of our common stock and pre-funded warrants sold. The common warrants will be exercisable immediately and will expire five years from the date of issuance. The shares of common stock or pre-funded warrants, and the accompanying common warrants, can only be purchased together in this offering but will be issued separately and will be immediately separable upon issuance. Our common stock is listed on The Nasdaq Capital Market under the symbol "SYBX." The last reported sale price for our common stock on The Nasdaq Capital Market on September 25, 2023 was \$0.299 per share. The actual number of securities, and the offering price per share of common stock and accompanying common warrant and per pre-funded warrant and accompanying common warrant, and the exercise price for the accompanying common warrant, will be as determined between us and the underwriter at the time of pricing, and may be at a discount to the current market price. Therefore, the recent market price used throughout this prospectus may not be indicative of the actual public offering price. There is no established public trading market for the pre-funded warrants or the common warrants, and we do not expect a market to develop. In addition, we do not intend to apply for a listing of the pre-funded warrants or the common warrants on any national securities exchange.

The Nasdaq Stock Market, LLC ("Nasdaq") has granted us an extension until December 4, 2023 to regain compliance with its minimum closing bid price requirement for continued listing on The Nasdaq Capital Market. To regain compliance, the closing bid price of our common stock must meet or exceed \$1.00 per share for a minimum of ten consecutive business days during the 180-calendar day grace period. At our special meeting of stockholders held on September 21, 2023, our stockholders approved a proposed amendment to our Amended and Restated Certificate of Incorporation to effect a reverse stock split of our outstanding common stock at a ratio of not less than 1-for-5 and not greater than 1-for-15, subject to and as determined by our Board of Directors. The primary reason we sought stockholder approval of the reverse stock split was to attempt to increase the per share market price of our common stock to exceed the minimum closing bid price requirement for continued listing on the Nasdaq Capital Market.

You should read this prospectus, together with the additional information described under the headings "Where You Can Find More Information" and "Incorporation of Documents by Reference," carefully before you invest in any of our securities.

Investing in our common stock involves a high degree of risk. See “[Risk Factors](#)” beginning on page 7 of this prospectus and in the documents incorporated by reference into this prospectus.

	Per Share and Accompanying Common Warrant	Per Pre- Funded Warrant and Accompanying Common Warrant	Total ⁽¹⁾
Public offering price ⁽²⁾	\$	\$	\$
Underwriting discounts and commissions ⁽³⁾	\$	\$	\$
Proceeds, before expenses, to us	\$	\$	\$

- (1) Assumes no sale of pre-funded warrants.
- (2) The public offering price is \$ per share of common stock and accompanying common warrant and \$ per pre-funded warrant and accompanying common warrant.
- (3) See the section entitled “*Underwriting*” beginning on page 28 of this prospectus for a description of the compensation payable to the underwriter.

Neither the Securities and Exchange Commission, or the SEC, 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.

The underwriter expects to deliver the securities to purchasers on or about , 2023.

Book-Running Manager

Chardan

The date of this prospectus is , 2023.

TABLE OF CONTENTS

PROSPECTUS SUMMARY	1
THE OFFERING	5
RISK FACTORS	7
SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS	10
USE OF PROCEEDS	12
DIVIDEND INFORMATION	13
CAPITALIZATION	14
DESCRIPTION OF CAPITAL STOCK	16
DESCRIPTION OF SECURITIES WE ARE OFFERING	20
MATERIAL U.S. FEDERAL INCOME TAX CONSEQUENCES TO HOLDERS OF COMMON STOCK AND WARRANTS	23
UNDERWRITING	30
LEGAL MATTERS	32
EXPERTS	32
WHERE YOU CAN FIND MORE INFORMATION	32
INCORPORATION OF DOCUMENTS BY REFERENCE	33

You should rely only on the information we have included or incorporated by reference into this prospectus. Neither we nor the underwriter have authorized any dealer, salesman or other person to give any information or to make any representation other than those contained or incorporated by reference into this prospectus. You must not rely upon any information or representation not contained or incorporated by reference into this prospectus. This prospectus does 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 does this 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 the information contained in this 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 herein is correct on any date subsequent to the date of the document incorporated by reference, even though this prospectus is delivered, or securities are sold, on a later date.

No action is being taken in any jurisdiction outside the United States to permit a public offering of our common stock or possession or distribution of this prospectus in that jurisdiction. Person who come into possession of this prospectus in jurisdictions outside the United States are required to inform themselves about and to observe any restrictions as to this offering and the distribution of this prospectus applicable to that jurisdiction.

“Synlogic, Inc.,” “Synlogic,” the Synlogic logo, and other trademarks or service marks of Synlogic appearing in this prospectus are the property of our company. Other third-party logos and product/trade names are registered trademarks or trade names of their respective companies. Solely for convenience, trademarks and tradenames referred to in this prospectus appear (after the first usage) without the ® and ™ symbols, but those references are not intended to indicate, in any way, that we will not assert, to the fullest extent under applicable law, our rights or that the applicable owner will not assert its rights, to these trademarks and tradenames.

This prospectus contains or incorporates by reference summaries of certain provisions contained in some of the documents described herein, but reference is made to the actual documents for complete information. All the summaries are qualified in their entirety by the actual documents. Copies of some of the documents referred to herein have been filed or have been incorporated by reference as exhibits to the registration statement of which this prospectus forms a part, and you may obtain copies of those documents as described in this prospectus under the heading “*Where You Can Find More Information.*”

PROSPECTUS SUMMARY

This summary highlights information contained in other parts of this prospectus. Because it is only a summary, it does not contain all the information you should consider before investing in our securities and it is qualified in its entirety by, and should be read in conjunction with, the more detailed information appearing elsewhere in this prospectus and the information incorporated by reference herein. You should read all such documents carefully, especially the risk factors and our audited consolidated financial statements and the related notes included herein, before deciding to buy our securities. Unless the context requires otherwise, references in this prospectus to “Synlogic,” “Company,” “we,” “us” and “our” refer to Synlogic, Inc. and our subsidiaries.

Company Overview

We are a clinical-stage biotechnology company advancing novel, oral, non-systemically absorbed biotherapeutics to transform the care of serious diseases in need of new treatment options. Our late-stage pipeline is focused on rare metabolic diseases, led by labafenogene marselecobac (previously referred to as SYNBI934), currently being studied as a potential treatment for phenylketonuria (PKU) in Synpheny-3, a global, pivotal Phase 3 study. Additional product candidates address diseases including homocystinuria (HCU), enteric hyperoxaluria, gout, and cystinuria. This pipeline is fueled by the Synthetic Biotic platform, which applies precision genetic engineering to well-characterized probiotics based on the principles and techniques of synthetic biology, the application of programming and engineering to biological parts, systems, and organisms.

Our Drug Candidate Pipeline: Late-Stage Programs Focused on Rare Metabolic Diseases



We are focused on advancing our late-stage drug candidates for rare metabolic diseases, disorders that present a strong biological fit with Synthetic Biotics, and also provide synergies in clinical development, clinical trial execution and commercialization. Metabolic diseases result from alterations in how bodies break down or produce important metabolites or molecules needed for normal function. In patients with these diseases, the absence of certain enzymes causes metabolites to accumulate in the gut and systemically throughout the body. Our approach enables the design of GI-restricted, oral medicines designed to consume or modify disease-specific metabolites – an approach well suited for PKU and HCU, as well as other disorders in which the disease-specific metabolites transit through the GI tract, providing validated targets for these Synthetic Biotics.

In addition, patients with rare metabolic diseases due to inborn errors of metabolism are typically treated by the same relatively small and well-connected community of medical geneticist thought leaders and receive care

at the same metabolic clinics from a shared clinician network. The patient communities themselves are also often connected. These considerations present synergies for both clinical trial execution and management of multiple programs in different but related diseases, as well as for future product launches and commercialization.

PKU

Our pipeline is led by labafenogene marselecobac (SYNB1934), an orally administered, non-systemically absorbed, potential treatment for PKU, a rare metabolic disease caused by inherited mutations that impair the breakdown of phenylalanine (Phe), an amino acid found in all protein-containing foods. The goal of PKU management is to reduce plasma Phe below neurotoxic levels, reducing risk of neurocognitive complications. Current treatment options for PKU are limited due to safety and efficacy, leaving the majority of people living with PKU without medical management and with uncontrolled Phe. We designed labafenogene marselecobac (SYNB1934) to target and consume Phe in the GI tract by applying precision genetic engineering to a well-characterized probiotic, *E. coli* nissle, so that the Phe is metabolized into harmless byproducts within the GI tract. Results to date indicate the potential for labafenogene marselecobac (SYNB1934) to be the first and only orally administered, non-systemically absorbed medical treatment option for FDA available for patients to take alone, or as an adjunct to other medications for PKU. Following successful Phase 2 results, labafenogene marselecobac (SYNB1934) has advanced to Synpheny-3, a global, pivotal Phase 3 study. Labafenogene marselecobac (SYNB1934) has received Orphan Drug Designation, Fast Track designation, and Rare Pediatric Disease Designation (RPDD) from the FDA in addition to orphan designation from the European Medicines Agency (EMA).

Homocystinuria

HCU is a rare inherited metabolic disorder caused by a genetic defect that causes homocysteine and other toxic chemicals and their byproducts, including methionine, to build up in the blood and urine. Elevated homocysteine levels are associated with risk of life-threatening acute ischemic stroke as well as multisystem complications such as impairments of the eye (ectopia lentis and/or severe myopia), skeletal system, and neurocognitive impact (development delay and intellectual disability).

The first therapeutic intervention for HCU is typically to restrict methionine, a precursor to homocysteine, in the diet, with the goal of lowering plasma levels of total homocysteine (tHcy) to reduce risk of complications. SYNB1353, our drug candidate for HCU, was designed to leverage this pathway by consuming methionine in the GI tract as a means of reducing systemic levels of homocysteine. Like labafenogene marselecobac, SYNB1353 is an orally-administered, non-systemically absorbed investigational biotherapeutic based on genetic engineering of a probiotic to produce specific enzymes that metabolize methionine. In November 2022, we announced proof of mechanism was achieved based on the positive findings from a Phase 1 study in healthy volunteers using a dietary model of homocystinuria, which showed that SYNB1353 reduced plasma methionine by metabolizing methionine in the GI tract and preventing its absorption and systemic exposure. To date, the FDA has granted SYNB1353 Fast Track, Orphan Drug, and Rare Pediatric Disease designations as a potential treatment for HCU. Our next step for SYNB1353 is to advance to a Phase 2 study in patients with HCU.

Additional Clinical Pipeline & Preclinical Research Programs

In 2022, we achieved proof of concept for SYNB8802, in development for enteric hyperoxaluria, a well-recognized cause of recurrent kidney stones. During 2022, we also announced the naming of SYNB2081, a Synthetic Biotic designed to metabolize uric acid as a potential biotherapeutic for gout, which is currently in IND-enabling studies. We believe that both of these product candidates present compelling opportunities to help patients in significant need of new treatment options. We also believe that the programs would be best enabled in partnership with organizations with clinical and regulatory experience and expertise in relevant therapeutic areas, which would be complementary to our expertise on the Synthetic Biotic platform, and would benefit from the progress we continue to make in the rare metabolic space. We also have ongoing preclinical research activities to advance a Synthetic Biotic for cystinuria, a rare, genetic cause of recurrent kidney stones which is also caused by an underlying metabolic disorder.

In addition, we have continued our preclinical research collaboration with Roche, focused on inflammatory bowel disease (IBD), which began in June of 2021. Current approaches to treating IBD are focused on therapeutics that modulate the immune system and suppress inflammation, which is associated with systemic immunosuppression, and which includes greater susceptibility to infectious diseases and cancer. Because our approach is based on local delivery to the site of inflammation in the GI tract and not on systemic administration, we anticipate that our Synthetic Biotics may potentially offer an attractive safety profile in this therapeutic category, where safety is a particularly desirable attribute in a product profile compared to options available today.

Recent Developments

Nasdaq Deficiency Notification and Pending Reverse Stock Split

On May 25, 2023, we submitted to the Listing Qualifications Department of Nasdaq an application to transfer the listing of our common stock from The Nasdaq Global Market to The Nasdaq Capital Market. On June 6, 2023, we received a notice (the “Extension Notice”) from the Listing Qualifications Department informing us that Nasdaq granted us an additional 180 calendar days, or until December 4, 2023 to regain compliance with the minimum closing bid price requirement for continued listing on The Nasdaq Capital Market under Nasdaq Marketplace Rule 5550(a)(2). In connection with the Extension Notice, the listing of our common stock was transferred from the Nasdaq Global Market to the Nasdaq Capital Market, effective as of June 7, 2023. The Extension Notice has no other immediate effect on the listing of our common stock. If at any time before December 4, 2023, the closing bid price of our common stock is at least \$1.00 per share for a minimum of ten consecutive business days, Nasdaq will provide written confirmation that we have achieved compliance with Nasdaq Marketplace Rule 5550(a)(2). If compliance cannot be demonstrated to Nasdaq’s satisfaction by December 4, 2023, Nasdaq will provide written notification that our common stock will be delisted.

At our special meeting of stockholders held on September 21, 2023, we our stockholders approved a proposed amendment to our Amended and Restated Certificate of Incorporation to effect a reverse stock split of our outstanding common stock at a ratio of not less than 1-for-5 and not greater than 1-for-15, subject to and as determined by our Board of Directors. The primary reason we sought stockholder approval of the reverse stock split is to attempt to increase the per share market price of our common stock to exceed the minimum closing bid price requirement for continued listing on the Nasdaq Capital Market.

Additional Information

For additional information related to our business and operations, please refer to the reports incorporated herein by reference, including our Annual Report on Form 10-K for the year ended December 31, 2022 (the “2022 Form 10-K”) as filed with the SEC on March 29, 2023, our Quarterly Reports on Form 10-Q for the quarterly periods ended March 31, 2023, as filed with the SEC on May 11, 2023, and June 30, 2023, as filed with the SEC on August 10, 2023 (collectively, the “2023 Form 10-Qs”), and our Current Reports on Form 8-K as filed with the SEC, as described in the section entitled “*Incorporation of Documents by Reference*” beginning on page 31 of this prospectus.

Implications of Being a Smaller Reporting Company

We are a “smaller reporting company” as defined in Rule 12b-2 of the Exchange Act and have elected to take advantage of certain scaled disclosure available to smaller reporting companies.

Our Corporate Information

We were originally incorporated in the State of Delaware in December 2007 under the name “Mirna Therapeutics, Inc.” We carry on our business directly and through our subsidiaries.

On August 28, 2017, Mirna Therapeutics, Inc. (“Mirna”), completed its business combination with Synlogic, Inc. (“Private Synlogic”) pursuant to the Agreement and Plan of Merger and Reorganization, dated as of May 15, 2017, by and among Mirna, Meerkat Merger Sub, Inc. (“Merger Sub”), and Private Synlogic (the “Merger Agreement”), pursuant to which Merger Sub merged with and into Private Synlogic, with Private Synlogic surviving as a wholly owned subsidiary of Mirna (the “Merger”). On August 25, 2017, in connection with, and prior to the completion of the Merger, Mirna effected a reverse stock split of its common stock (the “Reverse Stock Split”), and on August 28, 2017, immediately after completion of the Merger, Mirna changed its name to “Synlogic, Inc.” (NASDAQ: SYBX).

Our principal executive offices are located at 301 Binney St., Suite 402, Cambridge, MA 02142, and our phone number is (617) 401-9975. Our website address is www.synlogictx.com. The information contained on, or that can be accessed through, our website is not a part of this prospectus. We have included our website address in this prospectus solely as an inactive textual reference.

THE OFFERING

Common stock offered by us	66,889,632 shares, assuming the sale of our shares of common stock at an assumed public offering price of \$0.299 per share, which is the last reported sale price of our common stock on Nasdaq on September 25, 2023, and no sale of any pre-funded warrants.
Pre-funded warrants offered by us	We are also offering to each purchaser whose purchase of shares of common stock in this offering would otherwise result in the purchaser, together with its affiliates and certain related parties, beneficially owning more than 4.99% (or, at the election of the purchaser, 9.99%) of our outstanding common stock immediately following the consummation of this offering, the opportunity to purchase, if the purchaser so chooses, pre-funded warrants, in lieu of shares of common stock. Each pre-funded warrant will be exercisable for one share of our common stock. The purchase price of each pre-funded warrant will equal the price per share at which the shares of common stock are being sold to the public in this offering, minus \$0.001, and the exercise price of each pre-funded warrant will be \$0.001 per share. This offering also relates to the shares of common stock issuable upon exercise of any pre-funded warrants sold in this offering. For each pre-funded warrant we sell, the number of shares of common stock we are offering will be decreased on a one-for-one basis.
Common warrants offered by us	We are also offering common warrants to purchase up to an aggregate of 66,889,632 shares of our common stock. Each share of our common stock and each pre-funded warrant is being sold together with a common warrant to purchase one share of our common stock. Each common warrant will have an exercise price of \$ per share (representing 100% of the public offering price), will be immediately exercisable and will expire on the fifth anniversary of the original issuance date. This prospectus also relates to the offering of the shares of common stock issuable upon exercise of the common warrants.
Common stock to be outstanding after this offering	135,503,494 shares (assuming the sale of \$20.0 million of our shares of common stock at an assumed public offering price of \$0.299 per share, which is the last reported sale price of our common stock on Nasdaq on September 25, 2023, no sale of any pre-funded warrants, and no exercise of any of the common warrants issued in this offering).
Use of Proceeds	We estimate the net proceeds to us from this offering, after deducting underwriting discounts and commissions and estimated offering expenses payable by us, will be approximately \$18.6 million, assuming a combined public offering price of \$0.299 per share and accompanying common warrant, which is the last reported sale price of our common stock on Nasdaq on September 25, 2023. The actual

offering price for the offered securities will be as determined between us and the underwriter at the time of pricing, and may be at a discount to the current market price. We intend to use the net proceeds from this offering for (i) the continued clinical development of labafenogene marselecobac for PKU, (ii) preparation of our manufacturing for a potential BLA filing, (iii) to further advance clinical development of SYN1353 for HCU, and (iv) for general corporate purposes. See the section entitled “Use of Proceeds” beginning on page 12 of this prospectus.

Risk Factors

An investment in our securities involves a high degree of risk. See the section entitled “Risk Factors” beginning on page 7 of this prospectus and the similarly entitled sections in the documents incorporated by reference into this prospectus.

Nasdaq Capital Market symbol

“SYBX.” We do not intend to list the pre-funded warrants or the common warrants on any securities exchange or nationally recognized trading system.

Outstanding Shares

Except as otherwise indicated herein, the number of shares of our common stock to be outstanding after this offering is based on 68,613,862 shares of common stock outstanding as of June 30, 2023 and excludes:

- 10,223,783 shares of common stock issuable upon exercise of outstanding options as of June 30, 2023, at a weighted average exercise price of \$2.64 per share, of which 4,230,915 shares were vested as of such date;
- 2,112,887 shares of common stock reserved for future issuance under the 2017 Stock Incentive Plan and the 2015 Equity Incentive Award Plan;
- 1,832,565 shares of common stock reserved for future issuance under the 2015 Employee Stock Purchase Plan; and
- 2,548,117 shares of common stock issuable upon the exercise of pre-funded warrants held by Ginkgo Bioworks, Inc. (“Ginkgo”), exercisable at a price of \$9.00 per share, with \$8.99 of such exercise price previously paid.

RISK FACTORS

Investing in our securities involves risks. Before making an investment decision, you should carefully consider the risks and other information we include or incorporate by reference in this prospectus. In particular, you should consider the risk factors described under the heading “Risk Factors” in our most recent Quarterly Report on Form 10-Q, as may be revised or supplemented by our subsequent periodic and current reports, which are on file with the SEC and are incorporated herein by reference, and which may be amended, supplemented or superseded from time to time by other reports we file with the SEC in the future. In addition to those risk factors, there may be additional risks and uncertainties which are not currently known to us or that we currently deem immaterial. Our business, financial condition or results of operations could be materially adversely affected by any of these risks. The occurrence of any of these risks might cause you to lose all or part of your investment in the offered securities.

Risks Relating to this Offering and Ownership of Our Common Stock

Even if this offering is successful, 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 be forced to delay, limit or terminate the development and commercialization of our product candidates, development of new product candidates or other operations.

As a clinical-stage biopharmaceutical company, our operations have consumed significant amounts of cash since our inception. We expect our research and development expenses to increase in connection with our ongoing activities, particularly as we continue to conduct clinical trials of and seek regulatory approvals for our product candidates.

Clinical development involves a lengthy and expensive process with uncertain outcomes and is subject to risks described under the heading “Risk Factors” in our most recent Quarterly Report on Form 10-Q, including that our preclinical studies or clinical trials may not be conducted as planned or completed on schedule and may not satisfy the requirements of the FDA, EMA, or other comparable foreign regulatory authorities. If we are required to conduct additional preclinical studies or clinical trials of our product candidates beyond those that we currently contemplate, if we are delayed or unable to successfully complete clinical trials of our product candidates or other testing, or if the results of these trials or tests are not positive or are only modestly positive or if there are safety concerns, we may require additional funding. We do not have any committed external source of funds. We expect to finance future cash needs through public or private equity or debt offerings or product collaborations. Additional capital may not be available in sufficient amounts or on reasonable terms, if at all. The current market environment for small biotechnology companies, like us, and broader macroeconomic factors, including recent and potential future disruptions in access to bank deposits or lending commitments due to bank failures, may preclude us from successfully raising additional capital.

If we do not raise additional capital, we may not be able to expand our operations or otherwise capitalize on our business opportunities, our business and financial condition will be negatively impacted and we may need to: significantly delay, scale back or discontinue research and discovery efforts and the development or commercialization of our product candidates or cease operations altogether; seek strategic alliances for research and development programs when we otherwise would not, or at an earlier stage than we would otherwise desire or on terms less favorable than might otherwise be available; or relinquish, or license on unfavorable terms, our rights to technologies or any other product candidates that we otherwise would seek to develop or commercialize ourselves.

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

Our management will have broad discretion with respect to the use of proceeds of this offering, including for any of the purposes described in the section entitled “Use of Proceeds” beginning on page 12 of this

[Table of Contents](#)

prospectus. You will be relying on the judgment of our management regarding the application of the proceeds of this offering. The results and effectiveness of the use of proceeds are uncertain, and we could spend the proceeds in ways that you do not agree with or that do not improve our results of operations or enhance the value of our common stock. Our failure to apply these funds effectively could harm our business, delay the development of our product candidates and cause the price of our common stock to decline.

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

In order to raise additional capital, we may in the future offer additional shares of common stock or other securities convertible into or exchangeable for our shares of common stock at prices that may not be the same as the prices 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 shareholders. The price per share at which we sell additional shares of common stock, or securities convertible or exchangeable into shares of common stock, in future transactions may be higher or lower than the prices per share paid by investors in this offering.

There is no public market for the pre-funded warrants or the common warrants being offered in this offering.

There is no established public trading market for the pre-funded warrants or the common warrants being offered in this offering, and we do not expect a market to develop. In addition, we do not intend to apply to list the pre-funded warrants or the common warrants on any securities exchange or nationally recognized trading system, including The Nasdaq Capital Market. Without an active market, the liquidity of the pre-funded warrants and the common warrants will be limited.

Holders of pre-funded warrants or common warrants purchased in this offering will have no rights as common stockholders until such holders exercise their warrants and acquire our common stock.

Until holders of pre-funded warrants acquire shares of our common stock upon exercise thereof, holders of warrants will have no rights with respect to the shares of our common stock underlying such warrants. Upon exercise of the pre-funded warrants or common warrants, the holders will be entitled to exercise the rights of a common stockholder only as to matters for which the record date occurs after the exercise date.

Future sales of substantial amounts of our common stock, or the possibility that such sales could occur, could adversely affect the market price of our common stock.

Future sales in the public market of shares of our common stock, including shares referred to in the foregoing risk factors or shares issued upon exercise of our outstanding stock options or warrants, or the perception by the market that these sales could occur, could lower the market price of our common stock or make it difficult for us to raise additional capital.

As of June 30, 2023, we had reserved for issuance 10,223,783 shares of our common stock issuable upon the exercise of outstanding stock options, of which 4,230,915 shares were vested as of such date, at a weighted-average exercise price of \$2.64 per share and 2,548,117 shares of common stock issuable upon the exercise of pre-funded warrants held by Ginkgo, exercisable at a price of \$9.00 per share, with \$8.99 of such exercise price previously paid. In the case of outstanding securities that have exercise or conversion prices that are below the market price of our common stock from time to time, our stockholders would experience dilution upon the exercise or conversion of these securities.

We may issue preferred stock in the future, and the terms of the preferred stock may reduce the value of our common stock.

We are authorized to issue up to five million shares of preferred stock in one or more series. Our board of directors may determine the terms of future preferred stock offerings without further action by our stockholders. If we issue shares of preferred stock, it could affect stockholder rights or reduce the market value of our

[Table of Contents](#)

outstanding common stock. In particular, specific rights granted to future holders of preferred stock may include voting rights, preferences as to dividends and liquidation, conversion and redemption rights, sinking fund provisions, and restrictions on our ability to merge with or sell our assets to a third party.

If our common stock becomes subject to the penny stock rules, it may be more difficult to sell our common stock.

The SEC has adopted rules that regulate broker-dealer practices in connection with transactions in penny stocks. Penny stocks are generally equity securities with a price of less than \$5.00 (other than securities registered on certain national securities exchanges or authorized for quotation on certain automated quotation systems, provided that current price and volume information with respect to transactions in such securities is provided by the exchange or system). The OTC Bulletin Board does not meet such requirements and if the price of our common stock is less than \$5.00 and our common stock is no longer listed on a national securities exchange such as Nasdaq, our stock may be deemed a penny stock. The penny stock rules require a broker-dealer, at least two business days prior to a transaction in a penny stock not otherwise exempt from those rules, to deliver to the customer a standardized risk disclosure document containing specified information and to obtain from the customer a signed and dated acknowledgment of receipt of that document. In addition, the penny stock rules require that prior to effecting any transaction in a penny stock not otherwise exempt from those rules, a broker-dealer must make a special written determination that the penny stock is a suitable investment for the purchaser and receive: (i) the purchaser's written acknowledgment of the receipt of a risk disclosure statement; (ii) a written agreement to transactions involving penny stocks; and (iii) a signed and dated copy of a written suitability statement. These disclosure requirements may have the effect of reducing the trading activity in the secondary market for our common stock, and therefore stockholders may have difficulty selling their shares.

We have never declared or paid cash dividends on our common stock and we do not anticipate paying cash dividends on our common stock in the foreseeable future.

Our business requires significant funding. We currently plan to invest all available funds and future earnings in the development and growth of our business and do not anticipate paying any cash dividends on our common stock in the foreseeable future and are prohibited by the terms of our outstanding indebtedness from paying dividends on any common stock, except with the prior consent of our lenders. As a result, capital appreciation, if any, of our common stock will be our stockholders' sole source of potential gain for the foreseeable future.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus and the documents incorporated by reference into this prospectus include forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934, as amended, that relate to future events or our future financial performance and involve known and unknown risks, uncertainties and other factors that may cause our actual results, levels of activity, performance or achievements to differ materially from any future results, levels of activity, performance or achievements expressed or implied by these forward-looking statements. Words such as, but not limited to, “anticipate,” “aim,” “believe,” “contemplate,” “continue,” “could,” “design,” “estimate,” “expect,” “intend,” “may,” “might,” “plan,” “predict,” “poise,” “project,” “potential,” “suggest,” “should,” “strategy,” “target,” “will,” “would,” and similar expressions or phrases, or the negative of those expressions or phrases, are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. Although we believe that we have a reasonable basis for each forward-looking statement contained in this prospectus and incorporated by reference into this prospectus, we caution you that these statements are based on our projections of the future that are subject to known and unknown risks and uncertainties and other factors that may cause our actual results, level of activity, performance or achievements expressed or implied by these forward-looking statements, to differ. The section in this prospectus entitled “*Risk Factors*” and the sections in our periodic reports, including the 2022 Form 10-K entitled “Business,” and in the 2022 Form 10-K and the 2023 Form 10-Qs entitled “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” as well as other sections in this prospectus and the documents or reports incorporated by reference into this prospectus, discuss some of the factors that could contribute to these differences. These forward-looking statements include, among other things, statements about:

- the success of our research and development efforts;
- the initiation, progress, timing, costs and results of clinical trials for our product candidates;
- the time and costs involved in obtaining regulatory approvals for our product candidates;
- the success of our collaborations with third parties;
- the progress, timing and costs involved in developing manufacturing processes and in manufacturing products, as well as agreements with third-party manufacturers;
- the rate of progress and cost of our commercialization activities;
- the expenses we incur in marketing and selling our product candidates, if approved;
- the revenue generated by sales of our product candidates, if approved;
- the emergence of competing or complementary technological developments;
- the terms and timing of any additional collaborative, licensing or other arrangements that we may establish;
- the acquisition of businesses, products and technologies;
- our need to implement additional infrastructure and internal systems;
- our need to add personnel and financial and management information systems to support our product development and potential future commercialization efforts, and to enable us to operate as a public company;
- the extent to which our business is adversely impacted by the effects of the coronavirus outbreak (“COVID-19”) or by other health epidemics or pandemics; and
- other risks and uncertainties, including those listed under “Risk Factors” on page 7 of this prospectus.

We may not actually achieve the plans, intentions or expectations disclosed in our forward-looking statements, and you should not place undue reliance on our forward-looking statements. Forward-looking

[Table of Contents](#)

statements should be regarded solely as our current plans, estimates and beliefs. We have included important factors in the cautionary statements included in this document, particularly in the section entitled “*Risk Factors*” beginning on page 7 of this prospectus that we believe could cause actual results or events to differ materially from the forward-looking statements that we make. Moreover, we operate in a very competitive and rapidly changing environment. New risks emerge from time to time. It is not possible for our management to predict all risks, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements we may make. Given these risks and uncertainties, readers are cautioned not to place undue reliance on such forward-looking statements. All forward-looking statements are qualified in their entirety by this cautionary statement. Our forward-looking statements do not reflect the potential impact of any future acquisitions, mergers, dispositions, joint ventures or investments we may make. You should read this prospectus and the documents that we have filed as exhibits to this prospectus and incorporated by reference herein completely and with the understanding that our actual future results may be materially different from the plans, intentions and expectations disclosed in the forward-looking statements we make. The forward-looking statements contained in this prospectus are made as of the date of this prospectus and we do not assume any obligation to update any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by applicable law.

USE OF PROCEEDS

We estimate that the net proceeds from our issuance and sale of our common stock and accompanying common warrants in this offering will be approximately \$18.6 million after deducting the underwriting discounts and commissions and estimated offering expenses payable by us and assuming a public offering price of \$0.299 per share and accompanying common warrant, which is the last reported sale price of our common stock on Nasdaq on September 25, 2023, assuming no sale of pre-funded warrants and excluding the proceeds, if any, from the exercise of any common warrants issued in this offering.

As of June 30, 2023, we had cash and cash equivalents of approximately \$46.3 million. We intend to use the net proceeds from this offering for (i) the continued clinical development of labafenogene marselecobac (SYNB1934) for PKU, including the ongoing Phase 3 study (ii) to prepare our manufacturing for a potential BLA filing should the Phase 3 study be successful, (iii) to further advance clinical development of SYNB1353 our clinical candidate for HCU, and (iv) for general corporate purposes.

This expected use of net proceeds from this offering and our existing cash and cash equivalents represents our intentions based upon our current plans and business conditions, which could change in the future as our plans and business conditions evolve. The amounts and timing of our actual expenditures may vary significantly depending on numerous factors, including the progress of our development, the status of and results from clinical trials, as well as any collaborations that we may enter with third parties for any product candidates we may seek to develop, and any unforeseen cash needs. As a result, our management will retain broad discretion over the allocation of the net proceeds from this offering. We have no current agreements, commitments or understandings for any material acquisitions or licenses of any products, businesses or technologies.

We anticipate existing cash and cash equivalents and the net proceeds from this offering will be sufficient to fund our planned operations through . We plan to raise additional capital in the future to fund the completion of the clinical development of our current product candidates and our ongoing working capital requirements.

As of the date of this prospectus, we cannot predict with certainty all the uses for the net proceeds to be received upon the completion of this offering or the amounts we will spend on the uses set forth above. Pending our use of the net proceeds from this offering, we intend to invest a portion of the net proceeds in a variety of capital preservation investments, including short-term, interest-bearing instruments and U.S. government securities.

DIVIDEND INFORMATION

We have never declared or paid any cash dividends on our common stock and do not anticipate declaring or paying any cash dividends on our common stock in the foreseeable future. We expect to retain all available funds and any future earnings to support operations and fund the development and growth of our business. Our board of directors has the right to authorize the issuance of preferred stock in the future, without further stockholder approval, the holders of which may have preferences over the holders of our common stock as to payment of dividends.

CAPITALIZATION

The following table sets forth our cash and cash equivalents and capitalization as of June 30, 2023:

- on an actual basis as of June 30, 2023; and
- on an as adjusted basis to give further effect to the issuance and sale of shares of our common stock and accompanying common warrants in this offering at an assumed public offering price of \$0.299 per share and accompanying common warrant, which is the last reported sale price for our common stock on Nasdaq on September 25, 2023, after deducting the underwriting discounts and commissions and estimated offering expenses payable by us, and assuming no pre-funded warrants are issued.

Our capitalization following the closing of this offering will be adjusted based on the actual public offering price and other terms of this offering determined at pricing. You should read this table together with our consolidated financial statements and the related notes and the sections entitled “*Management’s Discussion and Analysis of Financial Condition and Results of Operations*” in the 2022 Form 10-K and the 2023 Form 10-Qs, which are incorporated by reference herein.

	Actual (in thousands)	As Adjusted (in thousands) ⁽¹⁾
Cash and cash equivalents	\$ 46,261	\$ 64,763
Stockholders’ equity:		
Common stock, \$0.001 par value per share:	73	140
250,000,000 shares authorized and outstanding as of June 30, 2023; 72,810,751 shares issued and 68,613,862 shares outstanding as of June 30, 2023; [] shares issued and outstanding as adjusted		
Additional paid-in capital	444,906	463,341
Accumulated deficit	(387,689)	(387,689)
Total stockholders’ equity	54,774	73,276
Total capitalization	\$ 79,284	\$ 97,786

- (1) Each \$0.10 increase (decrease) in the assumed public offering price per share and accompanying common warrant would increase (decrease) the amount of cash and cash equivalents, working capital, total assets, and total stockholders’ equity by approximately \$4.9 million, assuming the number of securities offered by us, as set forth on the cover page of this prospectus, remains the same, no pre-funded warrants are issued, and after deducting underwriting discounts and commissions and estimated offering expenses payable by us. We may also increase or decrease the number of securities to be issued in this offering. Each increase (decrease) of 1.0 million shares and accompanying common warrants offered by us would increase (decrease) the as adjusted amount of cash and cash equivalents, working capital, total assets and total stockholders’ equity by approximately \$0.3 million, assuming the assumed public offering price remains the same, no pre-funded warrants are issued, and after deducting underwriting discounts and commissions and estimated offering expenses payable by us. The as adjusted information discussed above is illustrative only and will be adjusted based on the actual public offering price and other terms of this offering determined between us and the underwriter at pricing.

Except as otherwise indicated herein, the number of shares of our common stock to be outstanding after this offering is based on 68,613,862 shares of common stock outstanding as of June 30, 2023 and excludes:

- 10,223,783 shares of common stock issuable upon exercise of outstanding options as of June 30, 2023, at a weighted average exercise price of \$2.64 per share, of which 4,230,915 shares were vested as of such date;
- 2,112,887 shares of common stock reserved for future issuance under the 2017 Stock Incentive Plan and the 2015 Equity Incentive Award Plan;

[Table of Contents](#)

- 1,832,565 shares of common stock reserved for future issuance under the 2015 Employee Stock Purchase Plan; and
- 2,548,117 shares of common stock issuable upon the exercise of pre-funded warrants held by Ginkgo, exercisable at a price of \$9.00 per share, with \$8.99 of such exercise price previously paid.

DESCRIPTION OF CAPITAL STOCK

The following description of our capital stock summarizes the material terms and provisions of our common stock and our preferred stock. For the complete terms of our common stock, please refer to our amended and restated certificate of incorporation and our amended and restated bylaws, each as amended to date, that are incorporated by reference into the registration statement of which this prospectus is a part or may be incorporated by reference into this prospectus. The terms of these securities may also be affected by the Delaware General Corporation Law, or the DGCL. The summary below is qualified in its entirety by reference to our amended and restated certificate of incorporation and amended and restated bylaws, each as in effect at the time of any offering of securities under this prospectus.

General

Our amended and restated certificate of incorporation authorizes us to issue up to 250,000,000 shares of common stock, \$0.001 par value per share and 5,000,000 shares of preferred stock, \$0.001 par value per share.

Common Stock

Holders of our common stock are entitled to one vote for each share held on all matters submitted to a vote of stockholders and do not have cumulative voting rights. An election of directors by our stockholders shall be determined by a plurality of the votes cast by the stockholders entitled to vote on the election. Holders of common stock are entitled to receive proportionately any dividends as may be declared by our board of directors, subject to any preferential dividend rights of any series of preferred stock that we may designate and issue in the future. All shares of common stock outstanding as of the date of this prospectus and, upon issuance and sale, all shares of common stock that we may offer pursuant to this prospectus, will be fully paid and nonassessable.

In the event of our liquidation or dissolution, the holders of common stock are entitled to receive proportionately our net assets available for distribution to stockholders after the payment of all debts and other liabilities and subject to the prior rights of any outstanding preferred stock. Holders of common stock have no preemptive, subscription, redemption or conversion rights. There are no redemption or sinking fund provisions applicable to the common stock. Our outstanding shares of common stock are validly issued, fully paid and nonassessable. The rights, preferences and privileges of holders of common stock are subject to and may be adversely affected by the rights of the holders of shares of any series of preferred stock that we may designate and issue in the future.

The transfer agent and registrar for our common stock is American Stock Transfer & Trust Company, LLC.

Our common stock is listed for quotation on The Nasdaq Capital Market under the symbol "SYBX."

Preferred Stock

The following description of our preferred stock and the description of the terms of any particular series of preferred stock that we choose to issue hereunder are not complete. These descriptions are qualified in their entirety by reference to our amended and restated certificate of incorporation and the certificate of designation relating to any series of preferred stock issued by us. The rights, preferences, privileges and restrictions of the preferred stock of each series will be fixed by the certificate of designation relating to that series.

We currently have no shares of preferred stock outstanding. Our board of directors is authorized, without action by the stockholders, to designate and issue up to an aggregate of 5,000,000 shares of preferred stock in one or more series. Any or all of these rights may be greater than the rights of our common stock.

Our board of directors, without stockholder approval, can issue preferred stock with voting, conversion or other rights that could negatively affect the voting power and other rights of the holders of our common stock.

[Table of Contents](#)

Preferred stock could thus be issued quickly with terms calculated to delay or prevent a change in control of Synlogic or make it more difficult to remove our management. Additionally, the issuance of preferred stock may have the effect of decreasing the market price of our common stock.

Our board of directors may specify the following characteristics of any preferred stock:

- the maximum number of shares;
- the designation of the shares;
- the annual dividend rate, if any, whether the dividend rate is fixed or variable, the date or dates on which dividends will accrue, the dividend payment dates, and whether dividends will be cumulative;
- the price and the terms and conditions for redemption, if any, including redemption at the option of Synlogic or at the option of the holders, including the time period for redemption, and any accumulated dividends or premiums;
- the liquidation preference, if any, and any accumulated dividends upon the liquidation, dissolution or winding up of Synlogic's affairs;
- any sinking fund or similar provision, and, if so, the terms and provisions relating to the purpose and operation of the fund;
- the terms and conditions, if any, for conversion or exchange of shares of any other class or classes of Synlogic's capital stock or any series of any other class or classes, or of any other series of the same class, or any other securities or assets, including the price or the rate of conversion or exchange and the method, if any, of adjustment;
- the voting rights;
- any or all other preferences and relative, participating, optional or other special rights, privileges or qualifications, limitations or restrictions; and
- any preferred stock issued will be fully paid and nonassessable upon issuance.

Warrants

Our outstanding warrants contain customary net exercise provisions and contain provisions for the adjustment of the exercise price and the number of shares issuable upon the exercise of the warrant in the event of certain stock dividends, stock splits, recapitalizations, reclassifications, consolidations and other fundamental transactions.

Certain Provisions of Delaware Law and of the Company's Certificate of Incorporation and Bylaws

Delaware Law

We are subject to Section 203 of the Delaware General Corporation Law. Subject to certain exceptions, Section 203 prevents a publicly held Delaware corporation from engaging in a "business combination" with any "interested stockholder" for three years following the date that the person became an interested stockholder, unless the interested stockholder attained such status with the approval of our board of directors or unless the business combination is approved in a prescribed manner. A "business combination" includes, among other things, a merger or consolidation involving us and the "interested stockholder" and the sale of more than 10% of our assets. In general, an "interested stockholder" is any entity or person beneficially owning 15% or more of our outstanding voting stock and any entity or person affiliated with or controlling or controlled by such entity or person.

Charter Documents

Our restated certificate of incorporation and amended and restated bylaws divide our board of directors into three classes with staggered three year terms. The provision for a classified board could prevent a party who acquires control of a majority of our outstanding voting stock from obtaining control of our board of directors until the second annual stockholders meeting following the date the acquirer obtains the controlling stock interest. Our classified board provision could discourage a potential acquirer from making a tender offer or otherwise attempting to obtain control of Synlogic and could increase the likelihood that incumbent directors will retain their positions. Our amended and restated certificate of incorporation provides that, subject to the special rights of holders of one or more series of preferred stock, directors may be removed at any time, but only for cause by the affirmative vote of the holders of at least 66 and 2/3% of the voting power of all our outstanding voting stock.

Our restated certificate of incorporation provides that certain amendments of our certificate of incorporation and amendments by our stockholders of our amended and restated bylaws require the approval of at least 66 and 2/3% of the voting power of all outstanding stock. These provisions could discourage a potential acquirer from making a tender offer or otherwise attempting to obtain control of us and could delay changes in management.

Our restated bylaws establish an advance notice procedure for stockholder proposals to be brought before an annual meeting of our stockholders, including proposed nominations of persons for election to our board of directors. At an annual meeting, stockholders may only consider proposals or nominations specified in the notice of meeting or brought before the meeting by or at the direction of our board of directors. Stockholders may also consider a proposal or nomination by a person who was a stockholder at the time of giving notice and at the time of the meeting, who is entitled to vote at the meeting and who has complied with the notice requirements of our amended and restated bylaws in all respects provided that such proposal is properly made in accordance with Rule 14a-8 under the Exchange Act. The amended and restated bylaws do not give our board of directors the power to approve or disapprove stockholder nominations of candidates or proposals regarding other business to be conducted at a special or annual meeting of the stockholders. However, our amended and restated bylaws may have the effect of precluding the conduct of business at a meeting if the proper procedures are not followed. These provisions may also discourage or deter a potential acquirer from conducting a solicitation of proxies to elect the potential acquirer's own slate of directors or otherwise attempting to obtain control of us.

Our amended and restated bylaws provide that a special meeting of our stockholders may be called at any time by our board of directors. Because our stockholders do not have the right to call a special meeting, our stockholders cannot force stockholder consideration of a proposal over the opposition of our board of directors by calling a special meeting of stockholders prior to such time as a majority of our board of directors believed the matter should be considered and such stockholder would only be able to force consideration of such proposal at the next annual meeting, provided that the requestor met the notice requirements. The restriction on the ability of our stockholders to call a special meeting means that a proposal to replace one or more directors on our board of directors also could be delayed until the next annual meeting.

Our amended and restated bylaws do not allow stockholders to act by written consent without a meeting. Without the availability of stockholder action by written consent, a holder controlling a majority of our capital stock would not be able to amend our amended and restated bylaws or remove directors without holding a stockholders' meeting.

Limitation of Liability and Indemnification

Our restated certificate of incorporation contains provisions that limit the liability of our directors and officers for monetary damages to the fullest extent permitted by Delaware law. Consequently, our directors and executive officers will not be personally liable to us or our stockholders for monetary damages for any breach of fiduciary duties as directors or officers, except for liability for (1) any breach of the director's or officer's duty of loyalty to us or our stockholders, (2) any act or omission not in good faith or which involves intentional misconduct or a knowing violation of law, (3) with respect to our directors, unlawful payments of dividends or

[Table of Contents](#)

unlawful stock repurchases or redemptions as provided in Section 174 of the DGCL, or (4) any transaction from which the director or officer derived an improper personal benefit.

Our restated certificate of incorporation and amended and restated bylaws provide that we are required to indemnify our directors and officers, in each case to the fullest extent permitted by Delaware law. The amended and restated bylaws also provide that we are obligated to advance expenses incurred by a director or officer in advance of the final disposition of any action or proceeding, and permit us to secure insurance on behalf of any officer, director, employee or other agent for any liability arising out of his or her actions in that capacity regardless of whether we would otherwise be permitted to indemnify him or her under Delaware law.

We have entered and expect to continue to enter into agreements to indemnify our directors, executive officers and other employees as determined by our board of directors. With specified exceptions, these agreements provide for indemnification for related expenses including, among other things, attorneys' fees, judgments, fines and settlement amounts incurred by any of these individuals in any action or proceeding brought against them by reason of the fact that they are or were our agents. We believe that these provisions in our restated certificate of incorporation and amended and restated bylaws and indemnification agreements are necessary to attract and retain qualified directors and officers. We also maintain directors' and officers' liability insurance. This description of the limitation of liability and indemnification provisions of our restated certificate of incorporation, amended and restated bylaws and indemnification agreements is qualified in its entirety by reference to these documents.

DESCRIPTION OF SECURITIES WE ARE OFFERING

We are offering 66,889,632 shares of our common stock and common warrants to purchase up to 66,889,632 shares of our common stock. Each share of common stock is being sold together with a common warrant to purchase one (1) share of common stock. We are also offering pre-funded warrants to those purchasers whose purchase of share of common stock in this offering would result in the purchaser, together with its affiliates and certain related parties, beneficially owning more than 4.99% (or, at the election of the purchaser, 9.99%) of our outstanding shares of common stock following the consummation of this offering in lieu of the shares of common stock that would result in such excess ownership. Each pre-funded warrant will be exercisable for one (1) share of common stock. Each pre-funded warrant is being sold together with a common warrant to purchase one (1) share of common stock. The shares of common stock, pre-funded warrants and accompanying common warrants will be issued separately. We are also registering the shares of common stock issuable from time to time upon exercise of the pre-funded warrants and common warrants offered hereby.

Common Stock

The material terms and provisions of our common stock and each other class of our securities that qualifies or limits our common stock are described in the section entitled “*Description of Capital Stock*” beginning on page 18 of this prospectus.

Pre-Funded Warrants

The following summary of certain terms and provisions of pre-funded warrants that are being offered hereby is not complete and is subject to, and qualified in its entirety by, the provisions of the pre-funded warrant, the form of which is filed as an exhibit to the registration statement of which this prospectus forms a part. Prospective investors should carefully review the terms and provisions of the form of pre-funded warrant for a complete description of the terms and conditions of the pre-funded warrants.

Duration and Exercise Price

Each pre-funded warrant offered hereby will have an initial exercise price per share equal to \$0.001. The pre-funded warrants will be immediately exercisable and may be exercised at any time until the pre-funded warrants are exercised in full. The exercise price and number of shares of common stock issuable upon exercise is subject to appropriate adjustment in the event of stock dividends, stock splits, reorganizations or similar events affecting our common stock and the exercise price.

Exercisability

The pre-funded warrants will be exercisable, at the option of each holder, in whole or in part, by delivering to us a duly executed exercise notice accompanied by payment in full for the number of shares of our common stock purchased upon such exercise (except in the case of a cashless exercise as discussed below). A holder (together with its affiliates) may not exercise any portion of the pre-funded warrant to the extent that the holder would own more than 4.99% (or, at the election of the purchaser, 9.99%) of the outstanding common stock immediately after exercise, except that upon at least 61 days’ prior notice from the holder to us, the holder may increase the amount of ownership of outstanding stock after exercising the holder’s pre-funded warrants. No fractional shares of common stock will be issued in connection with the exercise of a pre-funded warrant. In lieu of fractional shares, we will pay the holder an amount in cash equal to the fractional amount multiplied by the exercise price.

Cashless Exercise

In lieu of making the cash payment otherwise contemplated to be made to us upon such exercise in payment

Table of Contents

of the aggregate exercise price, the holder may elect instead to receive upon such exercise (either in whole or in part) the net number of shares of common stock determined according to a formula set forth in the pre-funded warrants.

Fundamental Transaction

In the event of a fundamental transaction, as described in the pre-funded warrants and generally including any reorganization, recapitalization or reclassification of our common stock, the sale, transfer or other disposition of all or substantially all of our properties or assets, our consolidation or merger with or into another person, the acquisition of more than 50% of our outstanding common stock, or any person or group becoming the beneficial owner of 50% of the voting power represented by our outstanding common stock, the holders of the pre-funded warrants will be entitled to receive upon exercise of the pre-funded warrants the kind and amount of securities, cash or other property that the holders would have received had they exercised the pre-funded warrants immediately prior to such fundamental transaction.

Transferability

Subject to applicable laws, a pre-funded warrant may be transferred at the option of the holder upon surrender of the pre-funded warrant to us together with the appropriate instruments of transfer.

Exchange Listing

We do not intend to list the pre-funded warrants on any securities exchange or nationally recognized trading system.

Rights as a Stockholder

Except as otherwise provided in the pre-funded warrants or by virtue of such holder's ownership of shares of our common stock, the holders of the pre-funded warrants do not have the rights or privileges of holders of our common stock, including any voting rights, until they exercise their pre-funded warrants.

Common Warrants

The following summary of certain terms and provisions of the common warrants that are being offered hereby is not complete and is subject to, and qualified in its entirety by, the provisions of the common warrants, the form of which is filed as an exhibit to the registration statement of which this prospectus forms a part. Prospective investors should carefully review the terms and provisions of the form of common warrant for a complete description of the terms and conditions of the common warrants.

Duration and Exercise Price

Each common warrant offered hereby will have an initial exercise price per share equal to \$ _____ per share (representing 100% of the public offering price). The common warrants will be immediately exercisable and will expire on the fifth anniversary of the original issuance date. The exercise price and number of shares of common stock issuable upon exercise is subject to appropriate adjustment in the event of stock dividends, stock splits, reorganizations or similar events affecting our common stock and the exercise price. The common warrants will be issued separately from the common stock and pre-funded warrants, and may be transferred separately immediately thereafter. A common warrant to purchase one share of our common stock will be issued for every one share of common stock (or pre-funded warrant, as applicable) purchased in this offering.

Exercisability

The common warrants will be exercisable, at the option of each holder, in whole or in part, by delivering a duly executed exercise notice accompanied by payment in full for the number of shares of our common stock

Table of Contents

purchased upon such exercise (except in the case of a cashless exercise as discussed below). A holder (together with its affiliates) may not exercise any portion of the common warrant to the extent that the holder would own more than 4.99% (or, at the election of the purchaser, 9.99%) of the outstanding common stock immediately after exercise, except that upon at least 61 days' prior notice from the holder to us, the holder may increase the amount of ownership of outstanding stock after exercising the holder's warrants. No fractional shares of common stock will be issued in connection with the exercise of a common warrant. In lieu of fractional shares, we will pay the holder an amount in cash equal to the fractional amount multiplied by the exercise price.

Cashless Exercise

If, at the time a holder exercises its common warrants, a registration statement registering the issuance of the shares of common stock underlying the common warrants under the Securities Act is not then effective or available, then in lieu of making the cash payment otherwise contemplated to be made to us upon such exercise in payment of the aggregate exercise price, the holder may elect instead to receive upon such exercise (either in whole or in part) the net number of shares of common stock determined according to a formula set forth in the common warrants.

Fundamental Transaction

In the event of a fundamental transaction, as described in the common warrants and generally including any reorganization, recapitalization or reclassification of our common stock, the sale, transfer or other disposition of all or substantially all of our properties or assets, our consolidation or merger with or into another person, the acquisition of more than 50% of our outstanding common stock, or any person or group becoming the beneficial owner of 50% of the voting power represented by our outstanding common stock, the holders of the warrants will be entitled to receive upon exercise of the common warrants the kind and amount of securities, cash or other property that the holders would have received had they exercised the warrants immediately prior to such fundamental transaction. Notwithstanding the foregoing, in the event of a fundamental transaction, the holders of the warrants have the right to require us or a successor entity to redeem the warrants for cash in the amount of the Black-Scholes Value (as defined in each warrant) of the unexercised portion of the warrants concurrently with or within 30 days following the consummation of a fundamental transaction. However, in the event a fundamental transaction which is not in our control, including a fundamental transaction not approved by our board of directors, the holders of the warrants will only be entitled to receive from us or our successor entity, as of the date of consummation of such fundamental transaction the same type or form of consideration (and in the same proportion), at the Black-Scholes Value of the unexercised portion of the warrant that is being offered and paid to the holders of our common stock in connection with the fundamental transaction, whether that consideration is in the form of cash, stock or any combination of cash and stock, or whether the holders of our common stock are given the choice to receive alternative forms of consideration in connection with the fundamental transaction.

Transferability

Subject to applicable laws, a common warrant may be transferred at the option of the holder upon surrender of the common warrant together with the appropriate instruments of transfer.

Exchange Listing

We do not intend to list the common warrants on any securities exchange or nationally recognized trading system.

Right as a Stockholder

Except as otherwise provided in the common warrants or by virtue of such holder's ownership of shares of our common stock, the holders of the common warrants do not have the rights or privileges of holders of our common stock, including any voting rights, until they exercise their common warrants.

MATERIAL U.S. FEDERAL INCOME TAX CONSEQUENCES TO HOLDERS OF COMMON STOCK AND WARRANTS

The following is a summary of the material U.S. federal income tax consequences of the acquisition, ownership and disposition of our common stock and the pre-funded warrants, and the acquisition, ownership, exercise, expiration or disposition of the common warrants, but does not purport to be a complete analysis of all the potential tax considerations relating thereto. This summary is based upon the provisions of the Internal Revenue Code of 1986, as amended, or the Code, Treasury Regulations promulgated thereunder, administrative rulings and judicial decisions, all as of the date hereof. These authorities may be changed or subject to differing interpretations, possibly with retroactive effect, so as to result in U.S. federal income tax consequences different from those set forth below. We have not sought and will not seek any ruling from the Internal Revenue Service, or the IRS, with respect to the statements made and the conclusions reached in the following summary, and there can be no assurance that the IRS or a court will agree with such statements and conclusions.

This summary also does not address the tax considerations arising under the laws of any U.S. state or local or any non-U.S. jurisdiction, estate or gift tax, the 3.8% Medicare tax on net investment income or any alternative minimum tax consequences. In addition, this discussion does not address tax considerations applicable to a holder's particular circumstances or to a holder that may be subject to special tax rules, including, without limitation:

- banks, insurance companies or other financial institutions;
- tax-exempt or government organizations;
- brokers or dealers in securities or currencies;
- traders in securities that elect to use a mark-to-market method of accounting for their securities holdings;
- persons that own, or are deemed to own, more than five percent of our capital stock;
- certain U.S. expatriates, citizens or former long-term residents of the United States;
- persons who hold our common stock and pre-funded warrants or common warrants as a position in a hedging transaction, "straddle," "conversion transaction," synthetic security, other integrated investment, or other risk reduction transaction;
- persons who do not hold our common stock and pre-funded warrants or common warrants as a capital asset within the meaning of Section 1221 of the Code (generally, for investment purposes);
- persons deemed to sell our common stock and pre-funded warrants or common warrants under the constructive sale provisions of the Code;
- pension plans;
- partnerships, or other entities or arrangements treated as partnerships for U.S. federal income tax purposes, or investors in any such entities;
- persons for whom our stock constitutes "qualified small business stock" within the meaning of Section 1202 of the Code;
- integral parts or controlled entities of foreign sovereigns;
- controlled foreign corporations;
- passive foreign investment companies and corporations that accumulate earnings to avoid U.S. federal income tax; or
- persons that acquire our common stock or pre-funded warrants or common warrants as compensation for services.

[Table of Contents](#)

In addition, if a partnership, including any entity or arrangement classified as a partnership for U.S. federal income tax purposes, holds our common stock or pre-funded warrants or common warrants, the tax treatment of a partner generally will depend on the status of the partner, the activities of the partnership, and certain determinations made at the partner level. Accordingly, partnerships that hold our common stock or pre-funded warrants or common warrants, and partners in such partnerships, should consult their tax advisors regarding the U.S. federal income tax consequences to them of the purchase, ownership, and disposition of our common stock or pre-funded warrants or common warrants.

You are urged to consult your tax advisor with respect to the application of the U.S. federal income tax laws to your particular situation, as well as any tax consequences of the purchase, ownership and disposition of our common stock or pre-funded warrants or common warrants arising under the U.S. federal estate or gift tax rules or under the laws of any U.S. state or local or any non-U.S. or other taxing jurisdiction or under any applicable tax treaty.

Definition of a U.S. Holder

For purposes of this summary, a “U.S. Holder” is any beneficial owner of our common stock or pre-funded warrants or common warrants that is a “U.S. person,” and is not a partnership, or an entity treated as a partnership or disregarded from its owner, each for U.S. federal income tax purposes. A U.S. person is any person that, for U.S. federal income tax purposes, is or is treated as any of the following:

- an individual who is a citizen or resident of the United States;
- a corporation created or organized under the laws of the United States, any state thereof, or the District of Columbia;
- an estate, the income of which is subject to U.S. federal income tax regardless of its source; or
- a trust that (1) is subject to the primary supervision of a U.S. court and the control of one or more U.S. persons (within the meaning of Section 7701(a)(30) of the Code), or (2) has a valid election in effect to be treated as a U.S. person for U.S. federal income tax purposes.

For purposes of this summary, a “Non-U.S. Holder” is any beneficial owner of our common stock or pre-funded warrants or common warrants that is not a U.S. Holder or a partnership, or other entity treated as a partnership or disregarded from its owner, each for U.S. federal income tax purposes.

Treatment of Pre-funded Warrants

Although it is not entirely free from doubt, a pre-funded warrant should be treated as a share of our common stock for U.S. federal income tax purposes and a holder of pre-funded warrants should generally be taxed in the same manner as a holder of common stock, as described below. Accordingly, no gain or loss should be recognized upon the exercise of a pre-funded warrant and, upon exercise, the holding period of a pre-funded warrant should carry over to the share of common stock received. Similarly, the tax basis of the pre-funded warrant should carry over to the share of common stock received upon exercise, increased by the exercise price of \$0.01. Each holder should consult his, her or its own tax advisor regarding the risks associated with the acquisition of pre-funded warrants pursuant to this offering (including potential alternative characterizations). The balance of this discussion generally assumes that the characterization described above is respected for U.S. federal income tax purposes.

Tax Consequences to U.S. Holders

Distributions on Common Stock

As discussed above under “*Dividend Information – Dividend Policy*,” we do not currently expect to make distributions on our common stock. In the event that we do make distributions of cash or other property,

[Table of Contents](#)

distributions paid on common stock, other than certain pro rata distributions of common stock, will be treated as a dividend to the extent paid out of our current or accumulated earnings and profits and will be includible in income by the U.S. Holder and taxable as ordinary income when received. If a distribution exceeds our current and accumulated earnings and profits, the excess will be first treated as a tax-free return of the U.S. Holder's investment, up to the U.S. Holder's tax basis in the common stock. Any remaining excess will be treated as a capital gain. Subject to applicable limitations, dividends paid to certain non-corporate U.S. Holders may be eligible for taxation as "qualified dividend income" and therefore may be taxable at rates applicable to long-term capital gains. U.S. Holders should consult their tax advisers regarding the availability of the reduced tax rate on dividends in their particular circumstances. Dividends received by a corporate U.S. Holder will be eligible for the dividends-received deduction if the U.S. Holder meets certain holding period and other applicable requirements.

Constructive Dividends on Common Warrants

Under Section 305 of the Code, an adjustment to the number of shares of common stock that will be issued on the exercise of the common warrants, or an adjustment to the exercise price of the common warrants, may be treated as a constructive distribution to a U.S. Holder of the common warrants if, and to the extent that, such adjustment has the effect of increasing such U.S. Holder's proportionate interest in our "earnings and profits" or assets, depending on the circumstances of such adjustment (for example, if such adjustment is to compensate for a distribution of cash or other property to our stockholders). Adjustments to the exercise price of a common warrant made pursuant to a bona fide reasonable adjustment formula that has the effect of preventing dilution of the interest of the holders of the warrants should generally not result in a constructive distribution. Any constructive distributions would generally be subject to the tax treatment described above under "Dividends on Common Stock".

Sale or Other Disposition of Common Stock

For U.S. federal income tax purposes, gain or loss realized on the sale or other disposition of common stock will be capital gain or loss, and will be long-term capital gain or loss if the U.S. Holder held the common stock for more than one year. The amount of the gain or loss will equal the difference between the U.S. Holder's tax basis in the common stock disposed of and the amount realized on the disposition. Long-term capital gains recognized by non-corporate U.S. Holders will be subject to reduced tax rates. The deductibility of capital losses is subject to limitations.

Sale or Other Disposition, Exercise or Expiration of Common Warrants

For U.S. federal income tax purposes, gain or loss realized on the sale or other disposition of a common warrant (other than by exercise) will be capital gain or loss and will be long-term capital gain or loss if the U.S. Holder held the warrant for more than one year at the time of the sale or other disposition. The amount of the gain or loss will equal the difference between the U.S. Holder's tax basis in the common warrant disposed of and the amount realized on the disposition.

In general, a U.S. Holder will not be required to recognize income, gain or loss upon the exercise of a common warrant by payment of the exercise price, except to the extent of cash paid in lieu of a fractional share. A U.S. Holder's tax basis in a share of common stock received upon exercise will be equal to the sum of (1) the U.S. Holder's tax basis in the common warrant and (2) the exercise price of the common warrant. A U.S. Holder's holding period in the stock received upon exercise will commence on the day or the day after such U.S. Holder exercises the common warrant. No discussion is provided herein regarding the U.S. federal income tax treatment on the exercise of a common warrant on a cashless basis, and U.S. Holders are urged to consult their tax advisors as to the exercise of a common warrant on a cashless basis.

If a common warrant expires without being exercised, a U.S. Holder will recognize a capital loss in an amount equal to such U.S. Holder's tax basis in the common warrant. This loss will be long-term capital loss if, at the time of the expiration, the U.S. Holder's holding period in the common warrant is more than one year. The deductibility of capital losses is subject to limitations.

Tax Consequences to Non-U.S. Holders

Distributions

As discussed in the section entitled "*Dividend Information—Dividend Policy*," we do not anticipate paying any dividends on our common stock in the foreseeable future. If we make distributions on our common stock or on our common warrants (as described above under "Constructive Dividends on Common Warrants"), those payments will constitute dividends for U.S. federal income tax purposes to the extent we have current or accumulated earnings and profits, as determined under U.S. federal income tax principles. To the extent those distributions exceed both our current and our accumulated earnings and profits, they will constitute a return of capital and will first reduce a Non-U.S. Holder's basis in our common stock or common warrants, as applicable, but not below zero. Any excess will be treated as capital gain and will be treated as described below under the "—Gain on Sale or Other Disposition of Common Stock or Common Warrants" section. Any such distributions would be subject to the discussions below regarding back-up withholding and Foreign Account Tax Compliance Act, or FATCA.

Subject to the discussion below on effectively connected income, any dividend paid to a Non-U.S. Holder generally will be subject to U.S. withholding tax either at a rate of 30% of the gross amount of the dividend or such lower rate as may be specified by an applicable income tax treaty. To receive a reduced treaty rate, a Non-U.S. Holder must provide us or our agent with an IRS Form W-8BEN, IRS Form W-8 BEN-E or another appropriate version of IRS Form W-8 (or a successor form), which must be updated periodically, and which, in each case, must certify qualification for the reduced rate. Non-U.S. Holders should consult their tax advisors regarding their entitlement to benefits under any applicable income tax treaty.

Dividends paid to a Non-U.S. Holder that are effectively connected with the Non-U.S. Holder's conduct of a trade or business within the United States and that are not eligible for relief from U.S. (net basis) income tax under an applicable income tax treaty, generally are exempt from the (gross basis) withholding tax described above. To obtain this exemption from withholding tax, the Non-U.S. Holder must provide the applicable withholding agent with an IRS Form W-8ECI or successor form or other applicable IRS Form W-8 certifying that the dividends are effectively connected with the Non-U.S. Holder's conduct of a trade or business within the United States. Such effectively connected dividends, if not eligible for relief under a tax treaty, would not be subject to a withholding tax, but would be taxed at the same graduated rates applicable to U.S. persons, net of certain deductions and credits and if, in addition, the Non-U.S. Holder is a corporation, may also be subject to a branch profits tax at a rate of 30% (or such lower rate as may be specified by an applicable income tax treaty).

If you are eligible for a reduced rate of withholding tax pursuant to a tax treaty, you may be able to obtain a refund of any excess amounts withheld if you timely file an appropriate claim for refund with the IRS.

Exercise or Expiration of Common Warrants

In general, a Non-U.S. Holder will not be required to recognize income, gain or loss upon the exercise of a common warrant by payment of the exercise price, except to the extent of cash paid in lieu of a fractional share. However, no discussion is provided herein regarding the U.S. federal income tax treatment on the exercise of a common warrant on a cashless basis, and Non-U.S. Holders are urged to consult their tax advisors as to the exercise of a common warrant on a cashless basis.

If a common warrant expires without being exercised, a Non-U.S. Holder that is engaged in a U.S. trade or business to which any income from the common warrant would be effectively connected or who is present in the United States for a period or periods aggregating 183 days or more during the calendar year in which the expiration occurs (and certain other conditions are met) will recognize a capital loss in an amount equal to such Non-U.S. Holder's tax basis in the common warrant.

Gain on Sale or Other Disposition of Common Stock or Common Warrants

Subject to the discussion below regarding backup withholding and FATCA, a Non-U.S. Holder generally will not be required to pay U.S. federal income tax on any gain realized upon the sale or other disposition of our common stock or common warrants unless:

- the gain is effectively connected with the Non-U.S. Holder's conduct of a trade or business within the United States and not eligible for relief under an applicable income tax treaty, in which case the Non-U.S. Holder will be required to pay tax on the net gain derived from the sale under regular graduated U.S. federal income tax rates, and for a Non-U.S. Holder that is a corporation, such Non-U.S. Holder may be subject to the branch profits tax at a 30% rate (or such lower rate as may be specified by an applicable income tax treaty) on such effectively connected gain, as adjusted for certain items;
- the Non-U.S. Holder is an individual who is present in the United States for a period or periods aggregating 183 days or more during the calendar year in which the sale or disposition occurs and certain other conditions are met, in which case the Non-U.S. Holder will be required to pay a flat 30% tax on the gain derived from the sale, which tax may be offset by U.S. source capital losses (even though the Non-U.S. Holder is not considered a resident of the United States) (subject to applicable income tax or other treaties); or
- we are a "U.S. real property holding corporation" for U.S. federal income tax purposes, or a USRPHC, at any time within the shorter of the five-year period preceding the disposition or the Non-U.S. Holder's holding period for our common stock or common warrants. We believe we are not currently and do not anticipate becoming a USRPHC. However, because the determination of whether we are a USRPHC depends on the fair market value of our United States real property interests relative to the fair market value of our other business assets, there can be no assurance that we will not become a USRPHC in the future. Even if we become a USRPHC, however, gain arising from the sale or other taxable disposition by a Non-U.S. Holder of our common stock will not be subject to United States federal income tax if (A) in the case of our common stock, (a) shares of our common stock are "regularly traded," as defined by applicable Treasury Regulations, on an established securities market, such as Nasdaq, and (b) the Non-U.S. Holder owns or owned, actually and constructively, 5% or less of the shares of our common stock throughout the five-year period ending on the date of the sale or exchange; and (B) in the case of our common warrants, either (a)(i) shares of our common stock are "regularly traded," as defined by applicable Treasury Regulations, on an established securities market, such as Nasdaq, (ii) our common warrants are not considered regularly traded on an established securities market and (iii) the Non-U.S. Holder does not own, actually or constructively, common warrants with a fair market value greater than the fair market value of 5% of the shares of our common stock, determined as of the date that such Non-U.S. Holder acquired its common warrants, or (b)(i) our common warrants are considered regularly traded on an established securities market, and (ii) the Non-U.S. Holder owns or owned, actually and constructively, 5% or less of our common warrants throughout the five-year period ending on the date of the sale or exchange. Our common warrants are not expected to be regularly traded on an established securities market. If the foregoing exception does not apply, such Non-U.S. Holder's proceeds received on the disposition of shares will generally be subject to withholding at a rate of 15% and such Non-U.S. Holder will generally be taxed on any gain in the same manner as gain that is effectively connected with the conduct of a U.S. trade or business, except that the branch profits tax generally will not apply.

Information Reporting and Backup Withholding

Information returns may be filed with the IRS in connection with distributions on common stock or constructive dividends on common warrants, and the proceeds of a sale or other disposition of common stock or common warrants. A non-exempt U.S. Holder may be subject to U.S. backup withholding on these payments if it fails to provide its taxpayer identification number to the withholding agent and comply with certification procedures or otherwise establish an exemption from backup withholding.

A Non-U.S. Holder may be subject to U.S. information reporting and backup withholding on these payments unless the Non-U.S. Holder complies with certification procedures to establish that it is not a U.S. person (within the meaning of the Code). The certification requirements generally will be satisfied if the Non-U.S. Holder provides the applicable withholding agent with a statement on the applicable IRS Form W-8BEN or IRS Form W-8BEN-E (or suitable substitute or successor form), together with all appropriate attachments, signed under penalties of perjury, stating, among other things, that such Non-U.S. Holder is not a U.S. Person. Applicable Treasury Regulations provide alternative methods for satisfying this requirement. In addition, the amount of distributions on common stock or constructive dividends on common stock paid to a Non-U.S. Holder, and the amount of any U.S. federal tax withheld therefrom, must be reported annually to the IRS and the holder. This information may be made available by the IRS under the provisions of an applicable tax treaty or agreement to the tax authorities of the country in which the Non-U.S. Holder resides.

Payment of the proceeds of the sale or other disposition of common stock or common warrants to or through a non-U.S. office of a U.S. broker or of a non-U.S. broker with certain specified U.S. connections generally will be subject to information reporting requirements, but not backup withholding, unless the Non-U.S. Holder certifies under penalties of perjury that it is not a U.S. person or an exemption otherwise applies. Payments of the proceeds of a sale or other disposition of common stock or common warrants to or through a U.S. office of a broker generally will be subject to information reporting and backup withholding, unless the Non-U.S. Holder certifies under penalties of perjury that it is not a U.S. person or otherwise establishes an exemption.

Backup withholding is not an additional tax. The amount of any backup withholding from a payment generally will be allowed as a credit against the holder's U.S. federal income tax liability and may entitle the holder to a refund, provided that the required information is timely furnished to the IRS.

Foreign Account Tax Compliance Act

FATCA imposes withholding tax on certain types of payments made to foreign financial institutions and certain other non-U.S. entities. The legislation imposes a 30% withholding tax on dividends on, or, subject to the discussion of certain proposed Treasury Regulations below, gross proceeds from the sale or other disposition of, our common stock or common warrants paid to a "foreign financial institution" or to certain "non-financial foreign entities" (each as defined in the Code), unless (i) the foreign financial institution undertakes certain diligence and reporting obligations, (ii) the non-financial foreign entity either certifies it does not have any "substantial United States owners" (as defined in the Code) or furnishes identifying information regarding each substantial United States owner, or (iii) the foreign financial institution or non-financial foreign entity otherwise qualifies for an exemption from these rules. If the payee is a foreign financial institution and is subject to the diligence and reporting requirements in (i) above, it must enter into an agreement with the U.S. Treasury requiring, among other things, that it undertake to identify accounts held by "specified United States persons" or "United States-owned foreign entities" (each as defined in the Code), annually report certain information about such accounts, and withhold 30% on payments to account holders whose actions prevent it from complying with these reporting and other requirements. If the country in which a payee is resident has entered into an "intergovernmental agreement" with the United States regarding FATCA, that agreement may permit the payee to report to that country rather than to the U.S. Department of the Treasury. The U.S. Treasury recently released proposed Treasury Regulations which, if finalized in their present form, would eliminate the federal withholding tax of 30% applicable to the gross proceeds of a sale or other disposition of our common stock. In its preamble to

[Table of Contents](#)

such proposed Treasury Regulations, the U.S. Treasury stated that taxpayers may generally rely on the proposed regulations until final regulations are issued. Prospective investors should consult their own tax advisors regarding the possible impact of these rules on their investment in our common stock or common warrants, and the possible impact of these rules on the entities through which they hold our common stock or common warrants, including, without limitation, the process and deadlines for meeting the applicable requirements to prevent the imposition of this 30% withholding tax under FATCA.

The preceding discussion of U.S. federal tax considerations is for general information only. It is not tax advice. Each prospective investor should consult its tax advisor regarding the particular U.S. federal, state and local and non-U.S. tax consequences of purchasing, holding and disposing of our common stock or common warrants, including the consequences of any proposed change in applicable laws.

UNDERWRITING

We entered into an underwriting agreement with Chardan Capital Markets, LLC (“Chardan” or the “underwriter”) relating to this offering. Subject to the terms and conditions of the underwriting agreement, we have agreed to sell to Chardan and Chardan has agreed to purchase, 66,889,632 shares (or pre-funded warrants in lieu thereof) and 66,889,632 common warrants.

Chardan has agreed to purchase all of the shares of common stock and/or pre-funded warrants and accompanying common warrants offered by us. The obligations the underwriter may be terminated upon the occurrence of certain events specified in the underwriting agreement. Furthermore, pursuant to the underwriting agreement, the obligations of the underwriter are subject to customary conditions, representations and warranties contained in the underwriting agreement, such as receipt by the underwriter of officers’ certificates and legal opinions.

The underwriter has advised us that it proposes initially to offer the shares of common stock and/or pre-funded warrants and accompanying common warrants to purchase shares of common stock to the public at the public offering price set forth on the cover page of this prospectus and to dealers at a price less a concession not in excess of \$ _____ per share and accompanying common warrant or \$ _____ per pre-funded warrant and accompanying common warrant, based on the combined public offering price per share and accompanying common warrant or pre-funded warrant and accompanying common warrant. After the shares of common stock and/or pre-funded warrants and accompanying common warrants are released for sale to the public, the underwriter may change the offering price, the concession, and other selling terms at various times.

We have agreed to indemnify the underwriter against certain liabilities, including liabilities under the Securities Act and to contribute to payments the underwriter may be required to make in respect thereof.

The underwriter is offering the securities in this offering subject to prior sale, when, as and if issued to and accepted by them subject to approval of legal matters by their counsel and other conditions specified in the underwriting agreement. The underwriter reserves the right to withdraw, cancel or modify orders to the public, and to reject orders in whole or in part.

Discounts, Commissions and Reimbursement

The following table provides information regarding the amount of the discounts and commissions to be paid to the underwriter by us.

	Per Share and Accompanying Common Warrant	Per Pre- Funded Warrant and Accompanying Common Warrant	Total
Public offering price	\$	\$	\$
Underwriting discounts and commissions ⁽¹⁾	\$	\$	\$
Proceeds to us, before expenses	\$	\$	\$

(1) We have agreed to pay the underwriter a commission of 6% of the gross proceeds of this offering.

We estimate that our total expenses of the offering, excluding the estimated underwriting discounts and commissions, will be approximately \$ _____, which includes the fees and expenses for which we have agreed to reimburse the underwriters, provided that any such fees and expenses will not exceed an aggregate of \$150,000.

Lock-Up Agreements

We, our officers and directors have agreed to a 90-day “lock-up” with respect to shares of our common stock and other of our securities that they beneficially own, including securities that are convertible into shares of common stock and securities that are exchangeable or exercisable for shares of common stock. This means that, subject to certain exceptions, for a period of 90 days following the date of this prospectus, we and such persons may not offer, sell, pledge or otherwise dispose of these securities without the prior written consent of Chardan.

Tail Period

In the event that this offering is not consummated as contemplated herein, the underwriter will be entitled to receive a cash fee equal to six percent (6.0%) of the gross proceeds received by us from any financing or capital raising transaction, to the extent that such proceeds are provided to us by any investor directly introduced by the underwriter to us during the period beginning on June 9, 2023 and ending on the termination of the engagement (the “Engagement Period”) and that any such transaction is consummated at any time during the Engagement Period or within the 12-month period following the Engagement Period.

Electronic Offer, Sale, and Distribution of Securities

A prospectus in electronic format may be made available on the websites maintained by the underwriter. The prospectus in electronic format will be identical to the paper version of such prospectus. The underwriter may agree to allocate a number of shares to underwriter and selling group members for sale to their online brokerage account holders. Internet distributions will be allocated by the underwriter and selling group members that will make internet distributions on the same basis as other allocations. Other than the prospectus in electronic format, the information on these websites is not part of, nor incorporated by reference into, this prospectus or the registration statement of which this prospectus forms a part, has not been approved or endorsed by us, and should not be relied upon by investors.

Listing

We have applied to list the shares of common stock offered on the Nasdaq Capital Market under the symbol “SYBX”. We do not intend to apply to list the pre-funded warrants or common warrants on any national securities exchange or other nationally recognized trading system.

Stabilization

In connection with this offering, the underwriter may engage in stabilizing transactions, syndicate-covering transactions, penalty bids, and purchases to cover positions created by short sales.

- Stabilizing transactions permit bids to purchase securities so long as the stabilizing bids do not exceed a specified maximum and are engaged in for the purpose of preventing or retarding a decline in the market price of the securities while the offering is in progress.
- Syndicate covering transactions involve purchases of securities in the open market after the distribution has been completed in order to cover syndicate short positions. In determining the source of securities to close out the short position, the underwriter will consider, among other things, the price of securities available for purchase in the open market. A naked short position is more likely to be created if the underwriter is concerned that after pricing there could be downward pressure on the price of the securities in the open market that could adversely affect investors who purchase in the offering.
- Penalty bids permit the underwriter to reclaim a selling concession from a syndicate member when the securities originally sold by that syndicate member are purchased in stabilizing or syndicate covering transactions to cover syndicate short positions.

[Table of Contents](#)

These stabilizing transactions, syndicate covering transactions, and penalty bids may have the effect of raising or maintaining the market price of our securities or preventing or retarding a decline in the market price of our securities. As a result, the price of our securities in the open market may be higher than it would otherwise be in the absence of these transactions. Neither we nor the underwriter make any representation or prediction as to the effect that the transactions described above may have on the price of our securities. These transactions may be affected on the Nasdaq Stock Market, in the over-the-counter market or otherwise and, if commenced, may be discontinued at any time.

Passive Market Making

In connection with this offering, the underwriters and selling group members may engage in passive market making transactions in our securities on the Nasdaq Stock Market in accordance with Rule 103 of Regulation M under the Exchange Act, during a period before the commencement of offers or sales of the shares and extending through the completion of the distribution. A passive market maker must display its bid at a price not in excess of the highest independent bid of that security. However, if all independent bids are lowered below the passive market maker's bid, then that bid must then be lowered when specified purchase limits are exceeded.

Certain Relationships

The underwriter and its affiliates have provided, or may in the future, from time to time, engage in transactions with and perform services for us in the ordinary course of their business for which they may receive customary fees and reimbursement of expenses. In the ordinary course of their various business activities, the underwriter and its affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for their own account and for the accounts of their customers, and such investment and securities activities may involve securities and/or instruments of our Company. The underwriter and its affiliates may also make investment recommendations and/or publish or express independent research views in respect of such securities or instruments and may at any time hold, or recommend to clients that they acquire, long and/or short positions in such securities and instruments.

LEGAL MATTERS

The validity of the securities offered hereby is being passed upon for us by Mintz, Levin, Cohn, Ferris, Glovsky & Popeo, P.C., New York, New York. Lowenstein Sandler LLP is acting as counsel for the underwriter in connection with this offering.

EXPERTS

The consolidated financial statements of Synlogic, Inc. as of December 31, 2022 and 2021, and for the years 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.

WHERE YOU CAN FIND MORE INFORMATION

We are a reporting company and file annual, quarterly and current reports, proxy statements and other information with the SEC. We have filed with the SEC a registration statement on Form S-1 under the Securities Act with respect to the offer and sale of our securities under this prospectus. This prospectus does not contain all of the information set forth in the registration statement and the exhibits to the registration statement. For further information with respect to us and the securities offered under this prospectus, we refer you to the registration statement and the exhibits filed as a part of the registration statement. The SEC also maintains an Internet site that contains reports, proxy and information statements and other information regarding issuers that file

[Table of Contents](#)

electronically with the SEC, including Synlogic, Inc. The SEC's Internet site can be found at www.sec.gov. We maintain a website at www.synlogictx.com. Information found on, or accessible through, our website is not a part of, and is not incorporated into, this prospectus, and you should not consider it part of this prospectus.

INCORPORATION OF DOCUMENTS BY REFERENCE

The SEC allows us to incorporate by reference the information we file with it, which means that we can disclose important information to you by referring you to another document that we have filed separately with the SEC. You should read the information incorporated by reference because it is an important part of this prospectus. Information in this 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 and the registration statement of which this prospectus is a part the information or documents listed below that we have filed with the SEC (Commission File No. 001-37566):

- Annual Report on Form [10-K](#) for the fiscal year ended December 31, 2022 as filed with the SEC on March 29, 2023;
- [Definitive Proxy Statement](#) on Schedule 14A, filed with the SEC on May 1, 2023 to the extent incorporated by reference into our Annual Report on Form 10-K for the year ended December 31, 2022 (other than the portions thereof that are furnished and not filed);
- Quarterly Reports on Form 10-Q for the quarterly periods ended March 31, 2023, as filed with the SEC on [May 11, 2023](#), and June 30, 2023, as filed with the SEC on [August 10, 2023](#);
- Current Reports on Form 8-K (other than the portions thereof that are furnished and not filed) as filed with the SEC on [January 19, 2023](#), [June 5, 2023](#), [June 15, 2023](#), [August 16, 2023](#) and [September 21, 2023](#);
- the description of our common stock contained in [Exhibit 4.3](#) to our Annual Report on Form 10-K for the fiscal year ended December 31, 2019, including any amendments or reports filed for purpose of updating such description; and
- all reports and other documents subsequently filed by us pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Exchange Act after the date of this prospectus and prior to the termination or completion of the offering of securities under this prospectus shall be deemed to be incorporated by reference in this prospectus and to be a part hereof from the date of filing such reports and other documents.

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 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 common stock made by this prospectus and 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 Synlogic, Inc., 301 Binney St., Suite 402, Cambridge, MA 02142. Our phone number is (617) 401-9975.

[Table of Contents](#)

You should rely only on information contained in, or incorporated by reference into, this prospectus and any prospectus supplement. We have not authorized anyone to provide you with information different from that contained in this prospectus or incorporated by reference into this prospectus. We are not making offers to sell the securities in any jurisdiction in which such an offer or solicitation is not authorized or in which the person making such offer or solicitation is not qualified to do so or to anyone to whom it is unlawful to make such offer or solicitation.

SYNLOGIC, INC.

**66,889,632 Shares of Common Stock
Pre-Funded Warrants to Purchase Shares of Common Stock
Common Warrants to Purchase up to 66,889,632 Shares of Common Stock**

PROSPECTUS

Book-Running Manager
Chardan

, 2023

PART II
INFORMATION NOT REQUIRED IN PROSPECTUS

Item 13. Other Expenses of Issuance and Distribution.

The following table sets forth the expenses to be incurred in connection with the offering described in this Registration Statement, other than underwriting discounts and commissions, all which will be paid by the Registrant. All amounts are estimates except the Securities and Exchange Commission, or SEC, registration fee and the Financial Industry Regulatory Authority, Inc., filing fee.

	Amount
Securities and Exchange Commission registration fee	\$ 4,408
Financial Industry Regulatory Authority, Inc. filing fee	3,500
Accountant's fees and expenses	35,000
Legal fees and expenses	\$ 150,000
Transfer agent's fees and expenses	5,000
Printing and engraving expenses	15,000
Miscellaneous	2,092
Total expenses	<u>\$ 215,000</u>

As permitted by Section 102 of the Delaware General Corporation Law, we have adopted provisions in our amended and restated certificate of incorporation and amended and restated bylaws, each as amended, which limit or eliminate the personal liability of our directors for a breach of their fiduciary duty of care as a director. The duty of care generally requires that, when acting on behalf of the corporation, directors exercise an informed business judgment based on all material information reasonably available to them. Consequently, a director will not be personally liable to us or our stockholders for monetary damages for breach of fiduciary duty as a director, except for liability for:

Item 14. Indemnification of Directors and Officers.

Section 102 of the General Corporation Law of the State of Delaware (the "Delaware General Corporation Law") permits a corporation to eliminate the personal liability of directors and officers of a corporation to the corporation or its stockholders for monetary damages for a breach of fiduciary duty as a director or officer, except where the director or officer breached his or her duty of loyalty, failed to act in good faith, engaged in intentional misconduct or knowingly violated a law, authorized the payment of a dividend or approved a stock repurchase in violation of Delaware corporate law or obtained an improper personal benefit.

Section 145 of the Delaware General Corporation Law authorizes a court to award, or a corporation's board of directors to grant, indemnity to directors and officers in terms sufficiently broad to permit such indemnification under certain circumstances for liabilities, including reimbursement for expenses incurred, arising under the Securities Act.

Section 145 of the Delaware General Corporation Law states:

(a) A corporation shall have power to 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 the 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

Table of Contents

interests of the corporation, and, with respect to any criminal action or proceeding, had no reasonable cause to believe the person's conduct was unlawful. The termination of any action, suit or proceeding by judgment, order, settlement, conviction, or upon a plea of nolo contendere or its equivalent, shall not, of itself, create a presumption that the person did not act in good faith and in a manner which 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 reasonable cause to believe that the person's conduct was unlawful.

(b) A corporation shall have power to 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 the 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) actually and reasonably incurred by the 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 and 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 of Chancery or such other court shall deem proper.

(c) To the extent that a present or former director or officer of a corporation has been successful on the merits or otherwise in defense of any action, suit or proceeding referred to in subsections (a) and (b) of this section, or in 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.

(d) Any indemnification under subsections (a) and (b) of this section (unless ordered by a court) shall be made by the corporation only as authorized in the specific case upon a determination that indemnification of the present or former director, officer, employee or agent is proper in the circumstances because the person has met the applicable standard of conduct set forth in subsections (a) and (b) of this section. Such determination shall be made, with respect to a person who is a director or officer of the corporation at the time of such determination:

- (1) By a majority vote of the directors who are not parties to such action, suit or proceeding, even though less than a quorum; or
- (2) By a committee of such directors designated by majority vote of such directors, even though less than a quorum; or
- (3) If there are no such directors, or if such directors so direct, by independent legal counsel in a written opinion; or
- (4) By the stockholders.

(e) Expenses (including attorneys' fees) incurred by an officer or director of the corporation in defending any civil, criminal, administrative or investigative action, suit or proceeding may be paid by the corporation in advance of the final disposition of such action, suit or proceeding upon receipt of an undertaking by or on behalf of such director or officer to repay such amount if it shall ultimately be determined that such person is not entitled to be indemnified by the corporation as authorized in this section. Such expenses (including attorneys' fees) incurred by former directors and officers or other employees and agents of the corporation or by persons serving at the request of the corporation as directors, officers, employees or agents of another corporation, partnership, joint venture, trust or other enterprise may be so paid upon such terms and conditions, if any, as the corporation deems appropriate.

(f) The indemnification and advancement of expenses provided by, or granted pursuant to, the other subsections of this section shall not be deemed exclusive of any other rights to which those seeking

[Table of Contents](#)

indemnification or advancement of expenses may be entitled under any bylaw, agreement, vote of stockholders or disinterested directors or otherwise, both as to action in such person's official capacity and as to action in another capacity while holding such office. A right to indemnification or to advancement of expenses arising under a provision of the certificate of incorporation or a bylaw shall not be eliminated or impaired by an amendment to the certificate of incorporation or the bylaws after the occurrence of the act or omission that is the subject of the civil, criminal, administrative or investigative action, suit or proceeding for which indemnification or advancement of expenses is sought, unless the provision in effect at the time of such act or omission explicitly authorizes such elimination or impairment after such action or omission has occurred.

(g) A corporation shall have power to purchase and maintain insurance on 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 this section.

(h) For purposes of this section, references to "the corporation" shall include, in addition to the resulting corporation, any constituent corporation (including any constituent of a constituent) absorbed in a consolidation or merger which, if its separate existence had continued, would have had power and authority to indemnify its directors, officers, and employees or agents, so that any person who is or was a director, officer, employee or agent of such constituent corporation, or is or was serving at the request of such constituent corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, shall stand in the same position under this section with respect to the resulting or surviving corporation as such person would have with respect to such constituent corporation if its separate existence had continued.

(i) For purposes of this section, references to "other enterprises" shall include employee benefit plans; references to "fines" shall include any excise taxes assessed on a person with respect to any employee benefit plan; and references to "serving at the request of the corporation" shall include any service as a director, officer, employee or agent of the corporation which imposes duties on, or involves services by, such director, officer, employee or agent with respect to an employee benefit plan, its participants or beneficiaries; and a person who acted in good faith and in a manner such person reasonably believed to be in the interest of the participants and beneficiaries of an employee benefit plan shall be deemed to have acted in a manner "not opposed to the best interests of the corporation" as referred to in this section.

(j) The indemnification and advancement of expenses provided by, or granted pursuant to, this section shall, unless otherwise provided when authorized or ratified, continue as to a person who has ceased to be a director, officer, employee or agent and shall inure to the benefit of the heirs, executors and administrators of such a person.

(k) The Court of Chancery is hereby vested with exclusive jurisdiction to hear and determine all actions for advancement of expenses or indemnification brought under this section or under any bylaw, agreement, vote of stockholders or disinterested directors, or otherwise. The Court of Chancery may summarily determine a corporation's obligation to advance expenses (including attorneys' fees).

As permitted by Delaware law, our restated certificate of incorporation limits or eliminates the personal liability of our directors to the maximum extent permitted by Delaware law.

Our amended and restated bylaws provide for indemnification of our directors and executive officers to the maximum extent permitted by the Delaware General Corporation Law.

In addition, we have entered into indemnification agreements with each of our current directors and executive officers. These agreements require us to indemnify these individuals to the fullest extent permitted

Table of Contents

under Delaware law against liabilities that may arise by reason of their service to us and to advance expenses incurred as a result of any proceeding against them as to which they could be indemnified. We also intend to enter into indemnification agreements with our future directors and executive officers.

We also maintain standard policies of insurance under which coverage is provided to our directors and officers against losses arising from claims made by reason of breach of duty or other wrongful act, and to us with respect to payments which may be made by us to such directors and officers pursuant to the above indemnification provisions or otherwise as a matter of law.

The above discussion of our restated certificate of incorporation, our amended and restated bylaws, our indemnification agreements with our current directors and executive officers and Sections 102 and 145 of the Delaware General Corporation Law is not intended to be exhaustive and is respectively qualified in its entirety by such amended and restated certificate of incorporation, such amended and restated bylaws, such indemnification agreements and such statutes.

To the extent that our directors, officers and controlling persons are indemnified under the provisions contained in our amended and restated certificate of incorporation, Delaware law or contractual arrangements against liabilities arising under the Securities Act, we have 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.

Item 15. Recent Sales of Unregistered Securities.

Employees surrendered 18,187 shares to us, at purchase prices ranging from \$3.50 to \$4.12, during the nine months ended September 30, 2021, for the payment of the minimum tax liability withholding obligations upon the vesting of shares of restricted stock. We do not consider this a share buyback program.

Item 16. Exhibits and Financial Statement Schedules.

<u>Exhibit Number</u>	<u>Exhibit Description</u>	<u>Filed Herewith</u>	<u>Incorporated by Reference herein from Form or Schedule</u>	<u>Filing Date</u>	<u>SEC File/Reg. Number</u>
1.1	Form of Underwriting Agreement, by and between the Registrant and Chardan Capital Markets LLC	X			
2.1 [^]	Agreement and Plan of Merger and Reorganization, dated as of May 15, 2017, by and among Mirna Therapeutics, Inc., Meerkat Merger Sub, Inc. and Synlogic, Inc.		8-K (Exhibit 2.1)	05/16/2017	001-37566
3.1	Amended and Restated Certificate of Incorporation		8-K (Exhibit 3.1)	10/6/2015	001-37566
3.2	Certificate of Amendment (Reverse Stock Split) to the Amended and Restated Certificate of Incorporation, dated August 25, 2017		8-K (Exhibit 3.1)	08/28/2017	001-37566
3.3	Certificate of Amendment (Name Change) to the Amended and Restated Certificate of Incorporation		8-K (Exhibit 3.2)	08/28/2017	001-37566

Table of Contents

3.4	Certificate of Amendment to Amended and Restated Certificate of Incorporation of Synlogic, Inc., dated June 15, 2023		8-K (Exhibit 3.1)	06/15/2023	001-37566
3.5	Amended and Restated Bylaws		8-K (Exhibit 3.2)	10/6/2015	001-37566
4.1	Form of Common Stock Certificate		S-1/A (Exhibit 4.2)	09/18/2015	333-206544
4.2	Pre-Funded Warrant		8-K (Exhibit 4.1)	06/12/2019	001-37566
4.3	Description of Securities		10-K (Exhibit 4.3)	03/12/2020	001-37566
4.4	Form of Pre-Funded Warrant	X			
4.5	Form of Common Warrant	X			
5.1*	Opinion of Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C.				
10.1#	2015 Equity Incentive Award Plan		10-K (Exhibit 10.1)	03/20/2018	001-37566
10.2#	Form of Stock Option Grant Notice and Stock Option Agreement under the 2015 Equity Incentive Award Plan.		S-1/A (Exhibit 10.9(B))	09/11/2015	333-206544
10.3#	Form of Restricted Stock Award Agreement and Restricted Stock Unit Award Grant Notice under the 2015 Equity Incentive Award Plan.		S-1/A (Exhibit 10.9(C))	09/11/2015	333-206544
10.4#	2017 Stock Incentive Plan		10-K (Exhibit 10.4)	03/20/2018	001-37566
10.5#	Form of Stock Option Grant Notice and Stock Option Agreement under 2017 Stock Incentive Plan.		10-Q (Exhibit 10.17)	11/13/2017	001-37566
10.6#	Non-Employee Director Compensation Program.		8-K (Exhibit 10.1)	01/31/2020	001-37566
10.7#	Form of Indemnification Agreement between the Company and each of its directors and officers		S-1/A (Exhibit 10.13)	09/11/2015	333-206544
10.8#	Offer Letter by and between Synlogic and Aoife M. Brennan, MB, BCh, BAO, MMSc, dated as of June 22, 2016		8-K (Exhibit 10.6)	08/28/2017	001-37566
10.9#	First Amendment to Offer Letter by and between Synlogic and Aoife M. Brennan, MB, BCh, BAO, MMSc, dated as of November 7, 2016		8-K (Exhibit 10.7)	08/28/2017	001-37566

Table of Contents

10.10#	<u>Second Amendment to Offer Letter by and between Synlogic and Aoife M. Brennan, MB, BCh, BAO, MMSc, dated as of May 8, 2017</u>	8-K (Exhibit 10.8)	08/28/2017	001-37566
10.11#	<u>Third Amendment to Offer Letter dated as of June 5, 2018, between Synlogic, Inc. and Aoife Brennan, MB, BCh, BAO, MMSc</u>	10-Q (Exhibit 10.1)	08/9/2018	001-37566
10.12#	<u>Amended and Restated Letter Agreement by and between Synlogic, Inc. and Aoife M. Brennan, MB, BCh, BAO, MMSc, dated as of October 1, 2018</u>	10-Q (Exhibit 10.1)	11/13/2018	001-37566
10.13	<u>Employment Agreement dated as of January 24, 2022, by and between Synlogic and Michael Jensen</u>	8-K (Exhibit 10.1)	03/03/2022	001-37566
10.14.1	<u>Employment Letter Agreement dated November 28, 2018, by and between Synlogic and Antoine Awad</u>	10-K (Exhibit 10.14.1)	03/25/2021	001-37566
10.14.2	<u>Promotion Letter, dated July 21, 2020, for Antoine Awad</u>	10-K (Exhibit 10.14.2)	03/25/2021	001-37566
10.15†^	<u>Agreement and Plan of Merger by and among AbbVie S.à.r.l., Suffolk Merger Sub, Inc., Synlogic IBDCo, Inc., Synlogic, LLC, Synlogic, Inc. and the founders named therein, dated as of July 16, 2015; as amended by a First Amendment to Agreement and Plan of Merger, dated as of December 14, 2015</u>	8-K (Exhibit 10.12)	08/28/2017	001-37566
10.16†^	<u>Second Amendment to Agreement and Plan of Merger by and among AbbVie S.à.r.l., Synlogic IBDCo, Inc. and Synlogic Operating Company, Inc., dated as of September 27, 2018</u>	10-Q (Exhibit 10.2)	11/13/2018	001-37566
10.17†^	<u>Third Amendment to Agreement and Plan of Merger and First Amendment to License Agreement by and among AbbVie S.à.r.l., Synlogic IBDCo, Inc. and Synlogic Operating Company, Inc., dated as of December 18, 2018</u>	10-K (Exhibit 10.25)	03/12/2019	001-37566
10.18†	<u>License Agreement by and between Synlogic, Inc. and Synlogic IBDCo, Inc., dated as of July 16, 2015</u>	8-K (Exhibit 10.13)	08/28/2017	001-37566
10.19	<u>Sales Agreement, dated as of July 23, 2021 by and between the registrant and Jefferies LLC</u>	10-Q (Exhibit 1.1)	11/10/2021	001-37566
10.20	<u>Form of Subscription Agreement, dated as of April 6, 2018, by and among Synlogic, Inc. and certain investors.</u>	8-K (Exhibit 10.1)	04/6/2018	001-37566
10.21†	<u>Master Contract Services Agreement, dated as of September 8, 2018, between Synlogic, Inc. and Azzur Group (d/b/a Azzur of New England LLC).</u>	10-K (Exhibit 10.29)	03/12/2019	001-37566

Table of Contents

10.22†	Statement of Work dated September 10, 2018 pursuant to Master Contract Services Agreement between Synlogic, Inc. and Azzur Group (d/b/a Azzur of New England LLC).	10-K (Exhibit 10.30)	03/12/2019	001-37566
10.23†	Statement of Work dated December 7, 2018 pursuant to Master Contract Services Agreement between Synlogic, Inc. and Azzur Group (d/b/a Azzur of New England LLC).	10-K (Exhibit 10.31)	03/12/2019	001-37566
10.24	Subscription Agreement dated June 11, 2019 by and between the Company and Ginkgo Bioworks, Inc.	8-K (Exhibit 10.1)	06/12/2019	001-37566
10.25†	Foundry Terms of Service Agreement dated June 11, 2019 by and between Synlogic Operating Company Inc. and Ginkgo Bioworks, Inc.	10-Q (Exhibit 10.2)	08/08/2019	001-37566
10.26	Consulting Agreement effective as of October 13, 2019 by and between the Company and Danforth Advisors, LLC, as amended	8-K (Exhibit 10.1)	10/24/2019	001-37566
10.27	Synlogic, Inc. 2015 Employee Stock Purchase Plan, as amended	8-K (Exhibit 10.1)	12/20/2019	001-37566
10.28†	License and Services Agreement and Statement of Work, dated April 28, 2021, by and between Synlogic Operating Company, Inc. and Azzur Cleanrooms-On-Demand – Boston, LLC.	10-Q (Exhibit 10.1)	08/12/2021	001-37566
10.29†	Pilot Collaboration and Option Agreement, dated June 16, 2021, among Synlogic Operating Company, Inc. and Hoffman-La Roche Inc.	10-Q (Exhibit 10.2)	08/12/2021	001-37566
10.30	Statement of Work dated January 21, 2022 pursuant to Master Contract Services Agreement between Synlogic, Inc. and Azzur Group (d/b/a Azzur of New England LLC), SOW P-10558-01	10-K (Exhibit 10.30)	03/17/2022	001-37566
10.31	Statement of Work dated January 21, 2022 pursuant to Master Contract Services Agreement between Synlogic, Inc. and Azzur Group (d/b/a Azzur of New England LLC), SOW P-10558-2	10-K (Exhibit 10.31)	03/17/2022	001-37566
10.32	Statement of Work dated November 22, 2022 pursuant to Master Contract Services Agreement between Synlogic, Inc. and Azzur Group (d/b/a Azzur of New England LLC), SOW P-10558-01 Extension A	10-K (Exhibit 10.32)	03/29/2023	001-37566
21.1	Subsidiaries of the registrant	10-K (Exhibit 21.1)	03/29/2023	001-37566

Table of Contents

23.1	Consent of Independent Registered Public Accounting Firm	X
23.2	Consent of Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C. (included in Exhibit 5.1 hereto)	X
24.1	Power of Attorney (included in the signature page hereto)	X
107	Filing Fee Table	X

[^] The schedules and exhibits to this exhibit have been omitted pursuant to Item 601(b)(2) of Regulation S-K. A copy of any omitted schedule and/or exhibit will be furnished to the SEC upon request.

[#] Management contract or compensatory plans or arrangements.

[†] Portions of this exhibit (indicated by asterisks) have been omitted in accordance with the rules of the Securities and Exchange Commission.

^{*} To be filed by amendment.

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;

(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 20 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement;

provided, however, that paragraphs (a)(1)(i), (ii), and (iii) of this section 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 section 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m or 78o(d)) that are incorporated by reference in the registration statement.

(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;

(2) That, for the purpose of determining any liability under the Securities Act, 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 of the registrant under the Securities Act 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

Table of Contents

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;
- (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

The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act, 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.

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

Insofar as indemnification for liabilities arising under the Securities Act 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 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 Act and will be governed by the final adjudication of such issue.

The undersigned registrant hereby undertakes that:

(1) For purposes of determining any liability under the Securities Act, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in a 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 part of this registration statement as of the time it was declared effective.

(2) For the purpose of determining any liability under the Securities Act, 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 these securities at that time shall be deemed to be the initial *bona fide* offering.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant has duly caused this Amendment No. 1 to the Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized in the City of Cambridge, Commonwealth of Massachusetts, on September 26, 2023.

SYNOLOGIC, INC.

By: /s/ Aoife Brennan MB, BCh, BAO, MMSc

Name: Aoife Brennan MB, BCh, BAO, MMSc

Title: *President and Chief Executive Officer*

POWER OF ATTORNEY

We, the undersigned officers and directors of Synlogic, Inc., hereby severally constitute and appoint Aoife Brennan MB, BCh, BAO, MMSc and Michael Jensen, and each of them singly, our true and lawful attorneys, with full power to them, and to each of them singly, to sign for us and in our names in the capacities indicated below, Amendment No. 1 to the Registration Statement on Form S-1/A filed herewith, and any and all pre-effective and post-effective amendments to said registration statement, and any registration statement filed pursuant to Rule 462(b) under the Securities Act of 1933, as amended, in connection with the registration under the Securities Act of 1933, as amended, of equity securities of the Company, and to file or cause to be filed the same, with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys, 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 each of us might or could do in person, and hereby ratifying and confirming all that said attorneys, and each of them, or their substitute or substitutes, shall do or cause to be done by virtue of this Power of Attorney.

Pursuant to the requirements of the Securities Act of 1933, this Amendment No. 1 to the Registration Statement on Form S-1 has been signed below by the following persons in the capacities and on the dates indicated.

Name	Title	Date
<u>/s/ Aoife Brennan MB, BCh, BAO, MMSc</u> Aoife Brennan MB, BCh, BAO, MMSc	President, Chief Executive Officer and Director <i>(Principal Executive Officer)</i>	September 26, 2023
<u>/s/ Michael Jensen</u> Michael Jensen	Chief Financial Officer <i>(Principal Financial Officer and Principal Accounting Officer)</i>	September 26, 2023
<u>/s/ Peter Barrett</u> Peter Barrett	Chairman of the Board	September 26, 2023
<u>/s/ Michael Burgess</u> Michael Burgess	Director	September 26, 2023
<u>/s/ Michael Heffernan</u> Michael Heffernan	Director	September 26, 2023

[Table of Contents](#)

Name	Title	Date
<u>/s/ Patricia Hurter</u> Patricia Hurter	Director	September 26, 2023
<u>/s/ Lisa Kelly-Croswell</u> Lisa Kelly-Croswell	Director	September 26, 2023
<u>/s/ Nick Leschly</u> Nick Leschly	Director	September 26, 2023
<u>/s/ Edward Mathers</u> Edward Mathers	Director	September 26, 2023
<u>/s/ Richard P. Shea</u> Richard P. Shea	Director	September 26, 2023

[•] Shares of Common Stock
(or Pre-Funded Warrants to Purchase Shares of Common
Stock in Lieu Thereof)

Warrants to Purchase [•] Shares of Common Stock

SYNOLOGIC, INC.

UNDERWRITING AGREEMENT

[•], 2023

CHARDAN CAPITAL MARKETS, LLC
17 State Street, Suite 2130
New York, NY 10004

Ladies and Gentlemen:

Synlogic, Inc., a Delaware corporation (the “Company”), proposes, subject to the terms and conditions stated herein, to issue and sell to Chardan Capital Markets, LLC, as underwriter (“Chardan” or the “Underwriter”) (i) an aggregate of [•] authorized but unissued shares (the “Shares”) of common stock, par value \$0.001 per share, of the Company (the “Common Stock”) or pre-funded warrants (the “Pre-Funded Warrants”) to purchase shares of Common Stock in lieu thereof at an exercise price of \$0.001 per share (the “Pre-Funded Warrant Shares”), and (ii) warrants (the “Warrants”) to purchase up to an aggregate of [•] shares of Common Stock (the “Warrant Shares”). The Shares, the Pre-Funded Warrants, the Pre-Funded Warrant Shares, the Warrants and the Warrant Shares are collectively referred to as the “Securities”. The offering of the Securities pursuant hereto is referred to as the “Offering”.

The Shares and/or Pre-Funded Warrants and Warrants shall be issued separately and shall be immediately separable and transferable upon issuance. The terms of the Pre-Funded Warrants are set forth in the form of Pre-Funded Warrant attached hereto as Exhibit A. The terms of the Warrants are set forth in the form of Warrant attached hereto as Exhibit B.

The Company and the Underwriter hereby confirm their agreement as follows:

1. Registration Statement and Prospectus. The Company has prepared and filed with the Securities and Exchange Commission (the “Commission”) a registration statement on Form S-1 (File No. 333-274421), including the related preliminary prospectus or prospectuses, covering the registration of the sale of the Securities under the Securities Act of 1933, as amended (the “Securities Act”), and the rules and regulations of the Commission thereunder (the “Rules and Regulations”). Promptly after execution and delivery of this Underwriting Agreement (this “Agreement”), the Company will prepare and file a prospectus in accordance with the provisions of Rule 430A (“Rule 430A”) of the Rules and Regulations and Rule 424(b) (“Rule 424(b)”) of the Rules and Regulations. The information included in such prospectus that was omitted from such registration statement at the time it became effective but that is deemed to be part of such registration statement at the time it became effective pursuant to Rule 430A(b) is herein called the “Rule 430A Information”. Such registration statement, including the amendments thereto, the exhibits thereto and any schedules thereto, at the time it became effective, and including the Rule 430A Information, is herein called the “Registration Statement”. Any registration statement filed pursuant to Rule 462(b) of the Rules and Regulations is herein called the “Rule 462(b) Registration Statement” and, after such filing, the term “Registration Statement” shall include the Rule 462(b) Registration Statement. Each prospectus used prior to the date and time that the Registration Statement is declared effective by the Commission (such time, the “Effective Time”), and each prospectus that omitted the Rule 430A Information that was used after such effectiveness and prior to the execution and delivery of this Agreement is herein called a “preliminary prospectus”. The final prospectus relating to the Securities that is first filed pursuant to Rule 424(b), in the form first furnished to the Underwriter for use in connection with the offering of the Securities, is herein called the “Prospectus”. For purposes of this Agreement, all references to the Registration Statement, any preliminary prospectus, 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 its Electronic Data Gathering, Analysis and Retrieval system or any successor system (“EDGAR”).

All references in this Agreement to financial statements and schedules and other information which is “described,” “contained,” “included” or “stated” in the Registration Statement or the Prospectus (or other references of like import) shall be deemed to mean and include all such financial statements, pro forma financial information and schedules and other information which is incorporated by reference in or otherwise deemed by the Rules and Regulations to be a part of or included in the Registration Statement or the Prospectus, as the case may be; and all references in this Agreement to amendments or supplements to the Registration Statement or the Prospectus shall be deemed to mean and include the subsequent filing of any document under the Securities Exchange Act of 1934, as amended (the “Exchange Act”), that is deemed to be incorporated therein by reference or otherwise deemed by the Rules and Regulations to be a part thereof.

2. Representations and Warranties of the Company Regarding the Offering.

(a) The Company represents and warrants to, and agrees with, the Underwriter, as of the date hereof and as of the Closing Date (as defined in Section 4(c) below) as follows:

(i) **No Material Misstatements or Omissions.** At the Effective Time, at the date hereof, the Registration Statement and any post-effective amendment thereto, at the time of filing thereof, conformed or will conform in all material respects with the requirements of the Securities Act and the Rules and Regulations and did 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. The Time of Sale Disclosure Package (as defined below), as of [•] [a.m./p.m.] (Eastern time) on the date hereof (the “Applicable Time”), on the Closing Date and the Prospectus, as amended or supplemented, as of its date, at the time of filing pursuant to Rule 424(b) under the Securities Act, at the Closing Date, when considered together with the Time of Sale Disclosure Package, did not or 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, in the light of the circumstances under which they were made, not misleading. The representations and warranties set forth in the two immediately preceding sentences shall not apply to statements in or omissions from the Registration Statement, the Time of Sale Disclosure Package, or any Prospectus in reliance upon, and in conformity with, the written information furnished by the Underwriter, which the Company acknowledges is limited to the information in the third paragraph under the caption “Underwriting” in each of the preliminary prospectus and the Prospectus related to the compensation of the Underwriter and the stabilization activities of the Underwriter (collectively, the “Underwriter’s Information”). No order preventing or suspending the effectiveness or use of the Registration Statement or any Prospectus is in effect and no proceedings for such purpose have been instituted or are pending, or, to the knowledge of the Company, are contemplated or threatened by the Commission.

(ii) **Marketing Materials.** The Company has not distributed any prospectus or other offering material in connection with the offering and sale of the Securities other than the Time of Sale Disclosure Package and the roadshow or investor presentations delivered to and approved by the Underwriter for use in connection with the marketing of the offering of the Securities (the “Marketing Materials”).

(iii) **Accurate Disclosure.** (A) The Company has provided a copy to the Underwriter of each Issuer Free Writing Prospectus (as defined below) used in the sale of the Securities, if any. The Company has filed all Issuer Free Writing Prospectuses required to be so filed with the Commission, and no order preventing or suspending the effectiveness or use of any Issuer Free Writing Prospectus is in effect and no proceedings for such purpose have been instituted or are pending, or, to the knowledge of the Company, are contemplated or threatened by the Commission. When taken together with the rest of the Time of Sale Disclosure Package or the Prospectus, no Issuer Free Writing Prospectus, as of the Closing Date, does or will include (1) any untrue statement of a material fact or omission to state any material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading, or (2) information that conflicts with the information contained in the Registration Statement or the Prospectus. The representations and warranties set forth in the immediately preceding sentence shall not apply to statements in or omissions from the Time of Sale Disclosure Package, the Prospectus or any Issuer Free Writing Prospectus in reliance upon, and in conformity with, the Underwriter’s Information.

(B) At the time of filing of the Registration Statement and at the date hereof, the Company was not and is not an “ineligible issuer,” as defined in Rule 405 under the Securities Act or an “excluded issuer” as defined in Rule 164 under the Securities Act.

Each Issuer Free Writing Prospectus listed on Schedule II hereto satisfied, as of its issue date and at all subsequent times through the Prospectus Delivery Period (as defined below), all other conditions as may be applicable to its use as set forth in Rules 164 and 433 under the Securities Act, including any legend, record-keeping or other requirements.

As used in this paragraph and elsewhere in this Agreement:

A. “**Time of Sale Disclosure Package**” means the most recent preliminary prospectus that is distributed to investors prior to the time of effectiveness, each Issuer Free Writing Prospectus, and the description of the transaction provided by the Underwriter included on Schedule II hereto.

B. “**Issuer Free Writing Prospectus**” means any “issuer free writing prospectus,” as defined in Rule 433 under the Securities Act, relating to the Securities that (A) is required to be filed with the Commission by the Company, or (B) is exempt from filing pursuant to Rule 433(d)(5)(i) or (d)(8) under the Securities Act, 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) under the Securities Act. For the avoidance of doubt, the term “Issuer Free Writing Prospectus” shall not include any “free writing prospectus” (as defined in Rule 405 under the Securities Act) that was prepared by any Underwriter or provided to any person by any Underwriter without the knowledge and consent of the Company.

(iv) **Financial Statements.** The financial statements included or incorporated by reference in the Registration Statement, Time of Sale Disclosure Package and the Prospectus, together with the related notes and schedules, present fairly the consolidated financial position of the Company as of the dates indicated and the consolidated results of operations and cash flows of the Company for the periods specified and have been prepared in compliance with the requirements of the Securities Act and Exchange Act and in conformity with United States generally accepted accounting principles (“GAAP”) applied on a consistent basis during the periods involved. The selected financial data and the summary financial information included in the Registration Statement and the Prospectus present fairly the information shown therein and have been compiled on a basis consistent with that of the financial statements included or incorporated by reference in the Registration Statement and the Prospectus, as of and at the dates indicated. Any pro forma financial statements or data included or incorporated by reference in the Registration Statement, Time of Sale Disclosure Package and the Prospectus comply with the requirements of Regulation S-X of the Securities Act, including, without limitation, Article 11 thereof, and the assumptions used in the preparation of such pro forma financial statements and data are reasonable, the pro forma adjustments used therein are appropriate to give effect to the circumstances referred to therein and the pro forma adjustments have been properly applied to the historical amounts in the compilation of those statements and data. The other financial data set forth or incorporated by reference in the Registration Statement, Time of Sale Disclosure Package and the Prospectus is accurately presented and prepared on a basis consistent with the financial statements and books and records of the Company. None of the Company nor any Subsidiary (as defined in Section 3(a)(iii) hereof) have any material liabilities or obligations, direct or contingent (including any off-balance sheet obligations or any “variable interest entities” as that term is used in Accounting Standards Codification Paragraph 810-10-25-20), not disclosed in the Registration Statement, Time of Sale Disclosure Package and the Prospectus. All disclosures contained in the Registration Statement, Time of Sale Disclosure Package or the Prospectus, including the documents incorporated therein by reference, that contain “non-GAAP financial measures” (as such term is defined by the rules and regulations of the Commission) comply, in all material respects, with Regulation G under the Exchange Act and Item 10 of Regulation S-K under the Securities Act, to the extent applicable.

(v) **Independent Accountants.** KPMG LLP, whose report on the consolidated financial statements of the Company and the Subsidiaries is incorporated by reference in the Registration Statement, Time of Sale Disclosure Package and the Prospectus, is an independent registered public accounting firm with respect to the Company as required by the Securities Act, the Exchange Act and the Public Company Accounting Oversight Board. KPMG LLP has not been engaged by the Company to perform any “prohibited activities” (as defined in Section 10A of the Exchange Act).

(vi) **Smaller Reporting Company.** As of the time of filing of the Registration Statement, the Company was a “smaller reporting company,” as defined in Rule 12b-2 promulgated by the Commission under the Exchange Act.

(vii) **Statistical and Marketing-Related Data.** The statistical and market-related data included in each of the Registration Statement, the Time of Sale Disclosure Package, the Prospectus or the Marketing Materials, are based on or derived from sources that the Company reasonably and in good faith believes are reliable and accurate or represent the Company’s good faith estimates that are made on the basis of data derived from such sources. To the extent required, the Company has obtained the written consent to the use of such data from such sources, other than such consents the failure of which to obtain is not reasonably likely to result in a Material Adverse Effect.

(viii) [Reserved].

(ix) **Trading Market.** The Common Stock is registered pursuant to Section 12(b) of the Exchange Act and is approved for listing on The Nasdaq Capital Market (“Nasdaq”). As of the Closing Date, the Shares, the Warrant Shares and the Pre-Funded Warrant Shares will have been duly authorized for listing on Nasdaq.

(x) **Absence of Manipulation.** Neither the Company, nor any of its Subsidiaries, nor, to the knowledge of the Company, any of its or their respective directors, officers or controlling persons has taken, directly or indirectly, any action designed to stabilize or manipulate, or which has constituted or might reasonably be expected to cause or result in, the stabilization or manipulation of, the price of any security of the Company to facilitate the sale or resale of the Securities.

(xi) **Lock-Up Agreements.** Schedule III hereto contains a complete and accurate list of the Company’s officers and directors of the Company’s outstanding shares of Common Stock (or securities convertible or exercisable into shares of Common Stock) that the Company has caused to deliver to the Underwriter an executed Lock-Up Agreement (collectively, the “Lock-Up Parties”), in the form attached hereto as **Exhibit C** (the “Lock-Up Agreement”), prior to the execution of this Agreement.

(xii) **Disclosure of Agreements.** The agreements and documents described in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus conform in all material respects to the descriptions thereof contained therein and there are no agreements or other documents required by the Securities Act and the Rules and Regulations to be described in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus or to be filed with the Commission as exhibits to the Registration Statement, that have not been so described or filed. Each agreement or other instrument (however characterized or described) to which the Company or any of its subsidiaries is a party or by which it is or may be bound or affected and that is referred to in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus has been duly authorized and validly executed by the Company or its subsidiaries and is in full force and effect in all material respects and is enforceable against the Company or its subsidiaries and, to the Company’s knowledge, the other parties thereto, in accordance with its terms, except (x) as such enforceability may be limited by bankruptcy, insolvency, reorganization or similar laws affecting creditors’ rights generally, (y) as enforceability of any indemnification or contribution provision may be limited under the federal and state securities laws, and (z) that the remedy of specific performance and injunctive and other forms of equitable relief may be subject to the equitable defenses and to the discretion of the court before which any proceeding therefor may be brought. Except as disclosed in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus or as is not reasonably likely to result in a Material Adverse Effect, none of such agreements or instruments has been assigned by the Company or its subsidiaries, and neither the Company, its subsidiaries nor, to the Company’s knowledge, any other party is in default thereunder and, to the Company’s knowledge, no event has occurred that, with the lapse of time or the giving of notice, or both, would constitute a default thereunder. To the Company’s knowledge, performance by the Company or its subsidiaries of the material provisions of such agreements or instruments will not result in a violation of any existing applicable law, rule, regulation, judgment, order or decree of any governmental authority, agency or court, domestic or foreign, having jurisdiction over the Company or its subsidiaries or any of its assets or businesses, including, without limitation, those relating to Environmental Laws (as defined below).

(xiii) **Testing-the-Waters.** The Company has not (a) engaged in any Testing-the-Waters Communication (as defined below) other than with the consent of the Underwriter with entities that are “qualified institutional buyers” within the meaning of Rule 144A under the Securities Act or institutions that are “accredited investors” within the meaning of Rule 501 under the Securities Act and (b) authorized anyone to engage in Testing-the-Waters Communications other than its officers and the Representative and individuals engaged by the Underwriter. The Company has not distributed any written Testing-the-Waters Communications. “Testing-the-Waters Communication” means any oral or written communication with potential investors undertaken in reliance on Section 5(d) of the Securities Act. Each Written Testing-the-Waters Communications did not, as of the Applicable Time, and at all times through the completion of the public offer and sale of the Securities will not, include any information that conflicted, conflicts or will conflict with the information contained in the Registration Statement, the Pricing Disclosure Package or the Prospectus. Each Written Testing-the-Waters Communication did not, as of the Applicable Time, when taken together with the Time of Sale Disclosure Package, contain an

untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading; *provided* that no representation or warranty is made as to the Underwriter's Information. The Company has not distributed any Written Testing-the-Waters Communications other than those listed on Schedule IV hereto.

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

(xxv) **Integration.** Neither the Company nor any of its affiliates, nor any person acting on its or their behalf has, directly or indirectly, made any offers or sales of any security or solicited any offers to buy any security, under circumstances that would cause the Offering to be integrated with prior offerings by the Company for purposes of the Securities Act that would require the registration of any such securities under the Securities Act.

(xxvi) **Transactions Affecting Disclosure to FINRA.**

- (a) **Finder's Fees.** Except as described in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus, there are no claims, payments, arrangements, agreements or understandings relating to the payment of a finder's, consulting or origination fee by the Company or, to the Company's knowledge, by any Insider with respect to the sale of the Securities hereunder or any other arrangements, agreements or understandings of the Company or, to the Company's knowledge, any of its stockholders that may affect the Underwriter's compensation, as determined by the Financial Industry Regulatory Authority, Inc. ("FINRA").
- (b) **Payments Within Twelve (12) Months.** Except as described in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus, the Company has not made any direct or indirect payments in connection with the Offering (in cash, securities or otherwise) to: (i) any person, as a finder's fee, consulting fee or otherwise, in consideration of such person raising capital for the Company or introducing to the Company persons who raised or provided capital to the Company; (ii) any FINRA member; or (iii) any person or entity that has any direct or indirect affiliation or association with any FINRA member, within the twelve (12) months prior to the Effective Date, other than the payment to the Underwriter as provided hereunder in connection with the Offering.
- (c) **Use of Proceeds.** None of the net proceeds of the Offering will be paid by the Company to any participating FINRA member or its affiliates, except as specifically authorized herein.
- (d) **FINRA Affiliation.** There is no (i) officer or director of the Company, (ii) beneficial owner of 10% or more of any class of the Company's securities or (iii) beneficial owner of the Company's unregistered equity securities which were acquired during the 180-day period immediately preceding the filing of the Registration Statement that is an affiliate or associated person of a FINRA member participating in the Offering (as determined in accordance with the rules and regulations of FINRA).
- (e) **Information.** All information provided by the Company in its FINRA questionnaire to counsel to the Underwriter specifically for use by them in connection with its Public Offering System filings (and related disclosure) with FINRA is true, correct and complete in all material respects.

(b) Any certificate from any officer of the Company and delivered to the Underwriter or to the Underwriter's counsel shall be deemed a representation and warranty by the Company to the Underwriter as to the matters covered thereby.

3. Representations and Warranties of the Company Regarding the Company.

(a) The Company represents and warrants to, and agrees with, the Underwriter, as of the date hereof and as of the Closing Date, as follows:

(i) **Good Standing.** The Company has been duly incorporated and is validly existing as a corporation in good standing under the law of the State of Delaware, with the corporate power and authority to acquire, own, lease and operate its properties, and to lease the same to others, and to conduct its business as described in the Registration Statement and the Prospectus, to execute and deliver this Agreement and to issue and sell the Securities as contemplated herein and therein; and the Company is in compliance in all respects with the laws, orders, rules, regulations and directives issued or administered by such jurisdictions, except where the failure to be in compliance would not, individually or in the aggregate, either (i) have or reasonably be expected to have a material adverse effect on the business, operations, properties, financial condition, results of operations or prospects of the Company and its Subsidiaries (as defined below), taken as a whole, or (ii) prevent, materially interfere with or materially delay consummation of the transactions contemplated hereby (the effects described in the foregoing clauses (i) and (ii) being herein referred to as a “Material Adverse Effect”).

(ii) **Foreign Qualification of the Company.** The Company is duly qualified to do business as a foreign corporation and is in good standing in each jurisdiction where the ownership or leasing of its properties or the conduct of its business requires such qualification, except where the failure to be so qualified and in good standing would not, individually or in the aggregate, have a Material Adverse Effect.

(iii) **Subsidiaries.** Each subsidiary of the Company (each a “Subsidiary” and collectively, the “Subsidiaries”) that is a significant subsidiary, as defined in Rule 1-02(w) of Regulation S-X of the Exchange Act (each a “Significant Subsidiary” and collectively, the “Significant Subsidiaries”), has been duly incorporated or organized and is validly existing as a corporation, limited liability company or limited partnership, as the case may be, in good standing under the law of the jurisdiction of its incorporation or organization, has corporate power and authority to own, lease and operate its properties and conduct its business as described in the Prospectus and is duly qualified as a foreign corporation, limited liability company or limited partnership, as the case may be, to transact business and is in good standing in each jurisdiction in which such qualification is required, whether by reason of the ownership or leasing of property or the conduct of business, except where the failure to so qualify would not have a Material Adverse Effect. All of the issued and outstanding capital stock of, or other ownership interests in, each such Significant Subsidiary has been duly authorized and validly issued, is fully paid and non-assessable and, except for directors’ qualifying shares, is owned by the Company, directly or through subsidiaries, free and clear of any security interest, mortgage, pledge, lien, encumbrance, claim or equity. At the date of filing with the Commission, the Company did not have any Significant Subsidiary not listed on Exhibit 21.1 to the Company’s most recent Annual Report on Form 10-K which was required to be so listed.

(iv) [Reserved].

(v) **Validity and Binding Effect of Agreements.** The Company has the power and authority to enter into this Agreement and to issue and sell the Securities as contemplated by this Agreement. The execution, delivery and performance of this Agreement, the Pre-Funded Warrants and the Warrants have been duly and validly authorized by the Company, and, when executed and delivered, will constitute the legal, valid and binding obligations of the Company, enforceable against the Company in accordance with their respective terms; provided, however, that the enforceability thereof may be limited by bankruptcy, insolvency, fraudulent transfer, reorganization, moratorium, and similar laws relating to or affecting creditors’ rights generally and by general principles of equity (regardless of whether such enforceability is considered a proceeding in equity or at law).

(vi) **Agreements.** The copies of all contracts, agreements, instruments and other documents (including governmental licenses, authorizations, permits, consents and approvals and all amendments or waivers relating to any of the foregoing) that have been furnished to the Underwriter or their counsel are complete and genuine and include all material collateral and supplemental agreements thereto.

(vii) **Absence of Defaults and Conflicts** Neither the Company nor any Subsidiary is (i) in breach or violation of its certificate or articles of incorporation, charter, bylaws, limited liability company agreement, certificate or agreement of limited or general partnership, memorandum and articles of association, or other similar organizational documents, as the case may be, of such entity, (ii) in breach of or in default (or, with the giving of notice or lapse of time or both, would be in default) (“Default”) under any indenture, mortgage, loan or credit agreement, deed of trust, note, contract, franchise, lease or other agreement, obligation, condition, covenant or instrument to which the Company or any Subsidiary is a party or by which it or any of them may be bound or to which any of the property or assets of the Company or any Subsidiary is subject (each, an “Existing Instrument”), or (iii) in violation of any statute, law, rule, regulation, judgment, order or decree of any court, regulatory body, administrative agency, governmental body, arbitrator or other authority having jurisdiction over

the Company or any Subsidiary or any of their properties, as applicable, except, with respect to clauses (ii) and (iii) only, for such breaches, violations or Defaults that would not, individually or in the aggregate, have a Material Adverse Effect. The Company's execution, delivery and performance of this Agreement and consummation of the transactions contemplated hereby or thereby or by 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 in the Prospectus under the caption "Use of Proceeds") (i) have been duly authorized by all necessary corporate action, and will not result in any breach or violation of the certificate or articles of incorporation, charter, bylaws, limited liability company agreement, certificate or agreement of limited or general partnership, memorandum and articles of association, or other similar organizational documents, as the case may be, of the Company or any Subsidiary, (ii) will not conflict with or constitute a breach of, or Default or a Debt Repayment Triggering Event (as defined below) under, or result in the creation or imposition of any lien, charge, claim or encumbrance upon any property or assets of the Company or any of its Significant Subsidiaries pursuant to, or require the consent of any other party to, any Existing Instrument, and (iii) will not result in any violation of any statute, law, rule, regulation, judgment, order or decree applicable to the Company or any Subsidiary of any court, regulatory body, administrative agency, governmental body, arbitrator or other authority having jurisdiction over the Company or any Subsidiary any of its or their properties, as applicable, except, with respect to clauses (ii) and (iii) only, for such conflicts, breaches, Defaults, Debt Repayment Triggering Events or violations that would not, individually or in the aggregate, have a Material Adverse Effect. As used herein, a "Debt Repayment Triggering Event" means any event or condition which gives, or with the giving of notice or lapse of time or both would give, the holder of any note, debenture or other evidence of indebtedness (or any person acting on such holder's behalf), issued by the Company, the right to require the repurchase, redemption or repayment of all or a portion of such indebtedness by the Company or any of its Significant Subsidiaries.

(viii) **Consents.** No consents, approvals, orders, authorizations or filings are required on the part of the Company in connection with the execution, delivery or performance of this Agreement or the issue and sale of the Securities, except (A) the registration under the Securities Act of the Securities, which has been effected, (B) the necessary filings and approvals from Nasdaq to list the Shares, the Warrant Shares, the Pre-Funded Warrant Shares, (C) such consents, approvals, authorizations, registrations or qualifications as may be required under state or foreign securities or "Blue Sky" laws and the rules of FINRA in connection with the purchase of the Shares and/or Pre-Funded Warrants and Warrants and distribution of the Securities by the Underwriter, (D) such consents and approvals as have been obtained and are in full force and effect, and (E) such consents, approvals, orders, authorizations and filings the failure of which to make or obtain is not reasonably likely to result in a Material Adverse Effect.

(ix) **SEC Reports.** The Company is subject to and in compliance in all material respects with the reporting requirements of Section 13 or Section 15(d) of the Exchange Act, and has timely filed all annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, proxy statements and all other reports required to be filed by the Company under the Exchange Act (together, the "SEC Reports") during the twelve (12) months preceding the date hereof.

(x) **Capitalization.** The Company has an authorized and outstanding capitalization as set forth in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus (subject, in each case, to the issuance of the Shares and/or Pre-Funded Warrants and Warrants under this Agreement, the grant of equity awards under existing equity award plans described in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus). All of the issued and outstanding shares of capital stock of the Company are duly authorized and validly issued, fully paid and nonassessable, have been issued in compliance with all applicable securities laws and conform in all material respects to the description thereof in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus. All of the issued shares of capital stock of each Subsidiary have been duly and validly authorized and issued, are fully paid and non-assessable and are owned directly or indirectly by the Company, free and clear of all liens, encumbrances, equities or claims, except to the extent that such liens, encumbrances, equities or claims would not reasonably be expected to have a Material Adverse Effect. Except for the issuances of options or restricted stock units pursuant to an equity incentive plan, since the respective dates as of which information is provided in the Registration Statement, the Time of Sale Disclosure Package or the Prospectus, the Company has not entered into or granted any convertible or exchangeable securities, options, warrants, agreements, contracts or other rights in existence to purchase or acquire from the Company any shares of the capital stock of the Company. The Shares, the Pre-Funded Warrants and the Warrants, when issued and paid for as provided herein, will be duly authorized and validly issued, fully paid and nonassessable, will be issued in compliance with all applicable securities laws, and will be free of pre-emptive, registration or similar rights and will conform in all material respects to the description of the capital stock of the Company contained in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus. The

Pre-Funded Warrant Shares and the Warrant Shares, when issued, paid for and delivered upon due exercise of the Pre-Funded Warrants and the Warrants, as applicable, will be duly authorized and validly issued, fully paid and nonassessable, will be issued in compliance with all applicable securities laws and will be free of pre-emptive, registration or similar rights.

(xi) **No Registration Rights.** No holders of any securities of the Company or any options, warrants, rights or other securities exercisable for or convertible or exchangeable into securities of the Company have the right to require the Company to register any such securities of the Company under the Securities Act or to include any such securities in the Registration Statement or any other registration statement to be filed by the Company, other than those rights that have been disclosed in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus and have been waived.

(xii) **No Pre-emptive Rights.** There are no pre-emptive rights or other rights to subscribe for or to purchase, or any restrictions upon the voting or transfer of, any shares of Common Stock pursuant to the Company's certificate of incorporation, by-laws or any agreement or other instrument to which the Company or any of its subsidiaries is a party or by which the Company or any of its subsidiaries is bound.

(xiii) **Taxes.** The Company and its Subsidiaries have filed all returns (as hereinafter defined) required to be filed with taxing authorities prior to the date hereof or has duly obtained extensions of time for the filing thereof. The Company and each of its Subsidiaries has paid all taxes (as hereinafter defined) shown as due on such returns that were filed and has paid all taxes imposed on or assessed against the Company, except those that are being contested in good faith or as would not have, individually or in the aggregate, result in a Material Adverse Effect. The provisions for taxes payable, if any, shown on the financial statements filed with or as part of the Registration Statement are sufficient for all accrued and unpaid taxes, whether or not disputed, and for all periods to and including the dates of such consolidated financial statements. Except as disclosed in writing to the Underwriter, (i) no material issues have been raised (and are currently pending) by any taxing authority in connection with any of the returns or taxes asserted as due from the Company, and (ii) no waivers of statutes of limitation with respect to the returns or collection of taxes have been given by or requested from the Company. To the Company's knowledge, there are no tax liens against the assets, properties or business of the Company. The term "**taxes**" means all federal, state, local, foreign and other net income, gross income, gross receipts, sales, use, ad valorem, transfer, franchise, profits, license, lease, service, service use, withholding, payroll, employment, excise, severance, stamp, occupation, premium, property, windfall profits, customs, duties or other taxes, fees, assessments or charges of any kind whatever, together with any interest and any penalties, additions to tax or additional amounts with respect thereto. The term "**returns**" means all returns, declarations, reports, statements and other documents required to be filed in respect to taxes.

(xiv) **Material Change.** Since the respective dates as of which information is given in the Registration Statement, the Time of Sale Disclosure Package or the Prospectus, (A) neither the Company nor any of its subsidiaries has incurred any material liabilities or obligations, direct or contingent, or entered into any material transactions other than in the ordinary course of business, (B) the Company has not declared or paid any dividends or made any distribution of any kind with respect to its capital stock; (C) there has not been any change in the capital stock of the Company or any of its subsidiaries (other than a change in the number of outstanding shares of Common Stock due to the issuance of shares upon the exercise of outstanding options or warrants, upon the conversion of outstanding shares of preferred stock or other convertible securities or upon the vesting of outstanding restricted stock units; (D) there has not been any material change in the Company's long-term or short-term debt, and (E) there has not been the occurrence of any Material Adverse Effect.

(xv) **Ownership Interest.** The Company does not own, directly or indirectly, any capital stock or other ownership interest in any partnership, corporation, business trust, limited liability company, limited liability partnership, joint stock company, trust, unincorporated association, joint venture or other entity.

(xvi) **Absence of Proceedings.** There is no pending or, to the knowledge of the Company, threatened action, suit or proceeding to which the Company or any of its subsidiaries is a party or of which any property or assets of the Company or any of its Subsidiaries is the subject before or by any court or governmental agency, authority or body, or any arbitrator or mediator, which, if determined adversely to the Company or its subsidiaries, would individually or in the aggregate, reasonably be likely to result in a Material Adverse Effect.

(xvii) **Possession of Licenses and Permits.** Each of the Company and its Significant Subsidiaries has all necessary licenses, authorizations, consents and approvals (including, without limitation, those administered by the United States Food and Drug Administration of the U.S. Department of Health and Human

Services (the “**FDA**”) or by any foreign, federal, state or local governmental or regulatory authority performing functions similar to those performed by the FDA) and has made all necessary filings required under any federal, state, local or foreign law, regulation or rule, and has obtained all necessary licenses, certificates, authorizations, orders, permits, consents and approvals from other persons, in order to acquire and own, lease or sublease, lease to others and conduct its respective business as described in the Registration Statement, Time of Sale Disclosure Package or Prospectus, except where the failure to have or obtain such licenses, permits, authorizations, consents and approvals and to make such filings would not, individually or in the aggregate, have a Material Adverse Effect. All of such license, permit, authorization, consent or approval are valid and in full force and effect, except where the invalidity of such license, permit, authorization, consent or approval to be in full force and effect would not have a Material Adverse Effect. Neither the Company nor any of its Significant Subsidiaries is in violation of, or in default under, or has received notice of any proceedings relating to revocation or modification of, any such license, permit, authorization, consent or approval (or has any reason to believe that any such license, permit, authorization, consent or approval will not be renewed in the ordinary course) or any federal, state, local or foreign law, regulation or rule or any decree, order or judgment applicable to the Company or any of its Significant Subsidiaries, except where such violation, default, revocation or modification.

(xviii) **Clinical Studies.** There is no legal or governmental proceeding to which the Company or any of its Subsidiaries is a party or of which any property or assets of the Company or any of its subsidiaries is the subject, including any proceeding before the FDA or comparable federal, state, local or foreign governmental bodies (it being understood that the interactions between the Company and the FDA and such comparable governmental bodies relating to the testing, clinical development, manufacture and product approval process for its products shall not be deemed proceedings for purposes of this representation), which is required to be described in the Registration Statement or the Prospectus or a document incorporated by reference therein and is not described therein, or which, singularly or in the aggregate, if determined adversely to the Company or its Subsidiaries, would reasonably be expected to have a Material Adverse Effect; and to the Company’s knowledge, no such proceedings are threatened or contemplated by governmental authorities or threatened by others. The Company is in compliance with all applicable federal, state, local and foreign laws, regulations, orders and decrees governing its business as currently conducted, or any other federal, state or foreign agencies or bodies engaged in the regulation of medical devices, except where noncompliance would not, singly or in the aggregate, reasonably be expected to have a Material Adverse Effect. All preclinical and clinical studies conducted by or on behalf of the Company and submitted to regulatory authorities to support approval for commercialization of the Company’s products have been conducted by the Company, or to the Company’s knowledge by third parties, in compliance with all applicable federal, state or foreign laws, rules, orders and regulations, except for such failure or failures to be in compliance as would not reasonably be expected to have, singly or in the aggregate, a Material Adverse Effect.

(xix) **Property.** The Company and each of its Subsidiaries have good and marketable title to all of the properties and assets reflected as owned in the financial statements referred to in Section 2(iv) above (or elsewhere in the Registration Statement and the Prospectus), in each case free and clear of any security interests, mortgages, liens, encumbrances, equities, claims and other defects, except such as do not materially and adversely affect the value of such property or assets and do not materially interfere with the use made or proposed to be made of such property by the Company or any Subsidiary. The material real property, improvements, equipment and personal property held under lease by the Company or any of its Significant Subsidiaries are held under valid and enforceable leases, with such exceptions as are not material and do not materially interfere with the use made or proposed to be made of such real property, improvements, equipment or personal property by the Company or such Subsidiary. The Company and each of its Subsidiaries have such consents, easements, rights-of-way or licenses from any person (“rights-of-way”) as are necessary to enable the Company and each of its Subsidiaries to conduct its business in the manner described in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus, and except for such rights-of-way the lack of which would not have, individually or in the aggregate, a Material Adverse Effect.

(xx) **Intellectual Property.** The Company and its Subsidiaries own or possess the right to use, or has a reasonable basis to believe that it can acquire on reasonable terms the right to use, all (i) patents, trademarks, service marks, service mark registrations, Internet domain name registrations, copyrights, licenses, trade secret rights (“Intellectual Property Rights”) and (ii) inventions, software, works of authorships, trademarks, service marks, trade names, databases, formulae, know how, Internet domain names and other intellectual property (including trade secrets and other unpatented and/or unpatentable proprietary confidential information, systems, or procedures) (collectively, “Intellectual Property Assets”) necessary to conduct its businesses as currently conducted and described in the Registration Statement and the Prospectus, and which the failure to own or have such rights would, individually 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 opinion from its legal counsel concluding that

any activities of their respective businesses infringe, misappropriate, or otherwise violate, valid and enforceable Intellectual Property Rights of any other person, and have not received written notice of any challenge, which is to their knowledge still pending, by any other person to the rights of the Company and its Subsidiaries with respect to any Intellectual Property Rights or Intellectual Property Assets owned or used by the Company and its Subsidiaries, which if determined adversely against the Company would, individually or in the aggregate, reasonably be expected to result in a Material Adverse Effect. To the knowledge of the Company, the business of the Company and its subsidiaries as now conducted does not give rise to any infringement of, any misappropriation of, or other violation of, any valid and enforceable Intellectual Property Rights of any other person. To the knowledge of the Company, all licenses for the use of the Intellectual Property Rights described in the Registration Statement and the Prospectus are valid, binding upon, and enforceable by or against the parties thereto in accordance to its terms. The Company and its subsidiaries have complied in all material respects with, and are not in breach nor have received any written notice of any asserted or threatened claim of breach of any Intellectual Property license, and the Company has no knowledge of any breach by any other person to any Intellectual Property license. No claim has been made against the Company nor its Subsidiaries alleging the infringement by the Company or its Subsidiaries of any patent, trademark, service mark, trade name, copyright, trade secret, license in or other intellectual property right or franchise right of any person, except as would not, individually or in the aggregate, reasonably be expected to result in a Material Adverse Effect. The Company and its Subsidiaries have taken reasonable steps to protect, maintain and safeguard its Intellectual Property Rights, including the execution of appropriate nondisclosure and confidentiality agreements. The consummation of the transactions contemplated herein will not result in the loss or impairment of or payment of any additional amounts with respect to, nor require any further consent of any other person in respect of, the right of the Company and its Subsidiaries to own, use, or hold for use any of the Intellectual Property Rights as owned, used or held for use in the conduct of the business as currently conducted. The Company and its Subsidiaries have taken reasonable actions to obtain ownership of works of authorship and inventions made by its employees, consultants and contractors during the time they were employed by or under contract with the Company and its Subsidiaries and which relate to the business of the Company, or licenses to use such works of authorship or inventions.

(xxi) **Labor Disputes.** No labor disturbance by or dispute with employees of the Company or any of its Subsidiaries exists or, to the knowledge of the Company, is threatened which would reasonably be expected to result in a Material Adverse Effect. None of the employees of the Company or any of its Subsidiaries is represented by a union and, to the knowledge of the Company, no union organizing activities are taking place. Neither the Company nor any of its Subsidiaries has violated any federal, state or local law or foreign law relating to the discrimination in hiring, promotion or pay of employees, nor any applicable wage or hour laws, or the rules and regulations thereunder, or analogous foreign laws and regulations, which might, individually or in the aggregate, result in a Material Adverse Effect.

(xxii) **ERISA Compliance.** (i) The Company and its Significant Subsidiaries and any “employee benefit plan” (as defined in Section 3(3) of the Employee Retirement Income Security Act of 1974, as amended, and the regulations and published interpretations thereunder (collectively, “ERISA”)) established or maintained by the Company, its Significant Subsidiaries or their ERISA Affiliates (as defined below) are in compliance in all material respects with ERISA and the Internal Revenue Code of 1986, as amended (the “Code”); (ii) no “reportable event” (as defined under ERISA), other than an event for which the reporting requirement has been waived under regulations issued by the Pension Benefit Guaranty Corporation, has occurred with respect to any pension plan subject to Title IV of ERISA that is established or maintained by the Company, its Significant Subsidiaries or any of their ERISA Affiliates (“Pension Plan”); (iii) no Pension Plan’s benefit liabilities under Section 4001(a)(16) of ERISA exceed the current value of that Pension Plan’s assets, all as determined as of the most recent valuation date for the Pension Plan in accordance with the assumptions used for funding the Pension Plan pursuant to Section 412 of ERISA; (iv) none of the Company, its Significant Subsidiaries or any of their ERISA Affiliates has incurred or reasonably expects to incur any liability under (A) Title IV of ERISA with respect to termination of, or withdrawal from, any “employee benefit plan,” (B) Sections 4971 or 4975 of the Code, (C) Section 412 of the Code as a result of a failure to satisfy the minimum funding standard, or (D) Section 4980B of the Code with respect to the excise tax imposed thereunder; and (v) each “employee benefit plan” established or maintained by the Company, its Significant Subsidiaries or any of their ERISA Affiliates that is intended to be qualified under Section 401(a) of the Code has received a favorable determination letter from the Internal Revenue Service and nothing has occurred, whether by action or failure to act, which is reasonably likely to cause disqualification of any such employee benefit plan under Section 401(a) of the Code, except in the case of each of clauses (i) through (v), which would not have a Material Adverse Effect. “ERISA Affiliate” means, with respect to the Company or a Significant Subsidiary, any member of any group of organizations described in Section 414(b), (c), (m) or (o) of the Code, of which the Company or such Significant Subsidiary is a member.

(xxiii) **Environmental Matters.** Neither the Company nor any of its Subsidiaries has been in material violation of, in connection with the ownership, use, maintenance or operation of its properties and assets, any applicable federal, state, municipal, local or foreign laws, rules, regulations, decisions, orders, policies, permits, licenses, certificates or approvals having force of law, domestic or foreign, relating to environmental, health, or safety matters or hazardous or toxic substances or wastes, pollutants or contaminants (collectively, "Environmental Laws"). Without limiting the generality of the foregoing: (i) the Company and each of its Subsidiaries has occupied its properties and has received, handled, used, stored, treated, shipped and disposed of all pollutants, contaminants, hazardous or toxic materials, controlled or dangerous substances or wastes in compliance with all applicable Environmental Laws to conduct their respective businesses; (ii) neither the Company nor any of its Subsidiaries is aware of any unlawful spills, releases, discharges or disposal of any pollutants, contaminants, hazardous or toxic materials, controlled or dangerous substances or wastes that have occurred or are presently occurring on or from its properties as a result of any construction on or operation and use of its properties, (iii) there are no orders, rulings or directives issued against the Company or any of its Subsidiaries, and there are no orders, rulings or directives pending or, to the knowledge of the Company, threatened against the Company or any of its Subsidiaries under or pursuant to any Environmental Laws requiring any work, repairs, construction or capital expenditures with respect to any properties or assets of the Company or any of its Subsidiaries; and (iv) no notice with respect to any of the matters referred to in this Section 3(xxiii), including any alleged violations by the Company or any of the Subsidiaries with respect thereto has been received by the Company or any of its Subsidiaries, and no writ, injunction, order or judgment is outstanding, and no legal proceeding under or pursuant to any Environmental Laws or relating to the ownership, use, maintenance or operation of the properties and assets of the Company or any of its Subsidiaries is in progress, pending or threatened, which could reasonably be expected to have a Material Adverse Effect, and to the knowledge of the Company, there are no grounds or conditions which exist, on or under any property now or previously owned, operated or leased by the Company or any of its Subsidiaries, on which any such legal proceeding might be commenced with any reasonable likelihood of success or with the passage of time, or the giving of notice or both, would give rise thereto.

(xxiv) **SOX Compliance.** 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 applicable 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.

(xxv) **Accounting Controls and Disclosure Controls.** The Company maintains a system of internal accounting controls sufficient to provide reasonable assurances that (i) transactions are executed in accordance with management's general or specific authorization; (ii) transactions are recorded as necessary to permit preparation of financial statements in conformity with GAAP and to maintain accountability for assets; (iii) receipts and expenditures are being made only in accordance with management's general or specific authorization; (iv) access to assets is permitted only in accordance with management's general or specific authorization; and (v) the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action is taken with respect to any differences. Since the end of the Company's most recent audited fiscal year, there has been (A) no material weakness in the Company's internal control over financial reporting (whether or not remediated) and (B) no change in the Company's internal control over financial reporting that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting. The Company and its Subsidiaries, considered as one enterprise, have established and currently maintain disclosure controls and procedures that comply with Rule 13a-15 under the Exchange Act, and the Company has determined that such disclosure controls and procedures are effective in compliance with Rule 13a-15 under the Exchange Act.

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

(xxvii) **Foreign Corrupt Practices Act.** None of the Company, any Subsidiary 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 (collectively, 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. The Company and the Subsidiaries have conducted their respective 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.

(xxviii) **OFAC.** None of the Company, any Subsidiary or, to the knowledge of the Company, any director, officer, agent, employee, affiliate or person acting on behalf of the Company or any of its Subsidiaries is currently subject to any U.S. sanctions administered by the Office of Foreign Assets Control of the U.S. Treasury Department (“**OFAC**”); and the Company will not directly or indirectly use the proceeds of the offering, or lend, contribute or otherwise make available such proceeds to any subsidiary, joint venture partner or other person or entity, for the purpose of financing the activities of any person currently subject to any U.S. sanctions administered by OFAC.

(xxix) **Cybersecurity.** With such exceptions as would not, individually or in the aggregate, have a Material Adverse Effect: (A) there has been no security breach or incident, unauthorized access or disclosure, or other compromise of or relating to the Company’s or any of its subsidiaries’ information technology and computer systems, networks, hardware, software, data and databases (including the data and information of their respective tenants, customers, employees, suppliers, vendors and any third party data maintained, processed or stored by the Company or any of its subsidiaries, and any such data processed or stored by third parties on behalf of the Company or any of its subsidiaries), equipment or technology (collectively, “**IT Systems and Data**”); (B) neither the Company nor any of its subsidiaries has been notified of, and have no knowledge of any event or condition that would result in, any security breach or incident, unauthorized access or disclosure or other compromise to their IT Systems and Data; and (C) the Company and its subsidiaries have implemented reasonably appropriate controls, policies, procedures and technological safeguards 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 material compliance with all applicable laws and 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.

(xxx) **Director Independence.** Each of the independent directors (or independent director nominees, once appointed, if applicable) named in the Registration Statement and Prospectus satisfies the independence standards established by the Exchange and, with respect to members of the Company’s audit committee, the enhanced independence standards contained in Rule 10A-3(b)(1) promulgated by the Commission under the Exchange Act.

(xxxi) **Related Party Transactions.** No relationship, direct or indirect, exists between or among the Company or any of its Subsidiaries on the one hand, and the directors, officers, trustees, managers, stockholders, partners, customers or suppliers of the Company or any of the Subsidiaries on the other hand, which would be required by the Securities Act to be disclosed in the Registration Statement and the Prospectus, which is not so disclosed.

(xxxii) **Insurance.** The Company and its Subsidiaries carry or are entitled to the benefits of insurance in such amounts and covering such risks as the Company reasonably deems adequate, and all such insurance is in full force and effect. The Company has no reason to believe that it or any Subsidiary will not be able (i) to renew its existing insurance coverage as and when such policies expire or (ii) 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 result in a Material Adverse Effect. Neither the Company nor any Subsidiary has been denied any material insurance coverage which it has sought or for which it has applied.

(xxxiii) **Transactions Affecting Disclosure to FINRA.** The Company is not required to register as a “broker” or “dealer” in accordance with the provisions of the Exchange Act and does not, directly or indirectly through one or more intermediaries, control or have any other association with (within the meaning of Article I of the By-laws of FINRA) any member firm of FINRA. No relationship, direct or indirect, exists between or among the Company, on the one hand, and the directors, officers or stockholders of the Company, on the other hand, which is required by the rules of FINRA to be described in the Registration Statement, and the Prospectus, which is not so described.

(xxxiv) **No Financial Advisor.** Other than the Underwriter, no person has the right to act as an underwriter or as a financial advisor to the Company in connection with the transactions contemplated hereby.

(xxxv) **Investment Company Act.** The Company is not, and, after giving effect to the offering and sale of the Securities and the application of the net proceeds thereof, including the proceeds received upon exercise of the Pre-Funded Warrants and/or the Warrants, will not be required to register as an “investment company,” as such term is defined in the Investment Company Act of 1940, as amended.

(xxxvi) **Public Filings.** The Registration Statement (and any further documents to be filed with the Commission in connection with the Offering) contains all exhibits and schedules as required by the Securities Act. Each of the Registration Statement and any post-effective amendment thereto, if any, at the time it became effective, complied in all material respects with the Securities Act and the applicable rules and regulations under the Securities Act and did not and, as amended or supplemented, if applicable, 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. The Prospectus complies in all material respects with the Securities Act and the applicable rules and regulations. The Prospectus, as amended or supplemented, did not and will not contain as of the date thereof any untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in light of the circumstances under which they were made, not misleading. The SEC Reports, when they respectively were filed with the Commission, conformed in all material respects to the requirements of the Securities Act and the Exchange Act, as applicable, and the applicable rules and regulations, and none of such documents, when they respectively were filed with the Commission, contained any untrue statement of a material fact or omitted to state a material fact necessary to make the statements therein (with respect to the SEC Reports incorporated by reference in the Prospectus), in light of the circumstances under which they were made not misleading; and any further documents so filed and incorporated by reference in the Prospectus when such documents are filed with the Commission, will conform in all material respects to the requirements of the Exchange Act and the applicable rules and regulations, as applicable, and will not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in light of the circumstances under which they were made not misleading. No post-effective amendment to the Registration Statement reflecting any facts or events arising after the date thereof which represent, individually or in the aggregate, a fundamental change in the information set forth therein is required to be filed with the Commission. There are no documents required to be filed with the Commission in connection with the transaction contemplated hereby that (A) have not been filed as required pursuant to the Securities Act or (B) will not be filed within the requisite time period. There are no contracts or other documents required to be described in the Prospectus, or to be filed as exhibits or schedules to the Registration Statement, which have not been described or filed as required.

(xxxvii) **No Off-Balance Sheet Arrangements.** There are no material off-balance sheet arrangements (as defined in Item 303 of Regulation S-K) that have or are reasonably likely to have a material current or future effect on the Company’s financial condition, revenues or expenses, changes in financial condition, results of operations, liquidity, capital expenditures or capital resources.

(xxxviii) **Certain Statements.** The statements set forth in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus under the caption “Description of Capital Stock,” insofar as they purport to constitute a summary of (A) the terms of the Company’s outstanding securities, (B) the terms of the Securities, and (C) the terms of the documents referred to therein, are accurate and fair in all material respects.

(xxxix) **Margin Securities.** The Company owns no “margin securities” as that term is defined in Regulation U of the Board of Governors of the Federal Reserve System (the “Federal Reserve Board”), and none of the proceeds of Offering will be used, directly or indirectly, for the purpose of purchasing or carrying any margin security, for the purpose of reducing or retiring any indebtedness which was originally incurred to purchase or carry any margin security or for any other purpose which might cause any of the Public Shares to be considered a “purpose credit” within the meanings of Regulation T, U or X of the Federal Reserve Board.

(xxxx) **Confidentiality and Non-Competition.** To the Company’s knowledge, no director, officer, key employee or consultant of the Company is subject to any confidentiality, non-disclosure, non-competition agreement or non-solicitation agreement with any employer or prior employer that could materially affect his ability to be and act in his respective capacity of the Company or be expected to result in a Material Adverse Effect. Each officer, key employee or consultant of the Company has entered into a confidentiality agreement in favor of the Company relating to the protection of the proprietary information and confidential information of the Company.

(xxxxi) **Corporate Records.** The minute books of the Company have been made available to the Underwriter and counsel for the Underwriter, and such books (i) contain minutes of all material meetings and actions of the board of directors (including each board committee) and stockholders of the Company, and (ii) reflect all material transactions referred to in such minutes.

4. Purchase, Sale and Delivery of Securities.

(a) On the basis of the representations, warranties and agreements herein contained, but subject to the terms and conditions herein set forth, (i) the Company agrees to issue and sell the Shares and/or Pre-Funded Warrants and Warrants to the Underwriter, and the Underwriter agrees to purchase the Shares and/or Pre-Funded Warrants and the Warrants as set forth opposite the name of the Underwriter on Schedule I attached hereto at a price of \$[•] per one Share and one Warrant and at a price of \$[•] per one Pre-Funded Warrant and one Warrant.

(b) Prior to the Closing Date, the Underwriter shall provide the Company with a list of investors to which the Underwriter allocated Pre-Funded Warrants and Warrants, as applicable (the "Investor List"). The Investor List shall specify the name, address and number of Pre-Funded Warrants and Warrants to be sold to each such investor. Prior to the Closing Date, the Company shall provide a draft of the Pre-Funded Warrants and Warrants, as applicable, to the Underwriter for review. On the Closing Date, the Company shall deliver the Pre-Funded Warrants and Warrants, by mailing such instruments to each investor in accordance with the Investor List through a U.S. nationally recognized overnight courier service. If the Company, upon the instruction of the Underwriter, registers any Pre-Funded Warrant or Warrant in the name of any person or entity to which the Underwriter intends to sell such Pre-Funded Warrant or Warrant, then the Underwriter shall have the right to thereafter, but prior to the Closing Date, request the re-registration of such Pre-Funded Warrant or Warrant (and the Company shall be required to re-register such Pre-Funded Warrant or Warrant) in the name of any other person or entity (it being understood that such re-registration is intended to permit the Underwriter to resell such Pre-Funded Warrant or Warrant in the event that the person or entity to which such Underwriter originally intended to sell such Pre-Funded Warrant or Warrant shall fail to pay the purchase price of such Pre-Funded Warrant).

(c) The Shares and/or Pre-Funded Warrants and Warrants will be delivered by the Company to the Underwriter (or as otherwise provided for in Section 4(b) above) against payment therefor by wire transfer of same day funds payable to the order of the Company at the offices of the Underwriter at 17 State Street, Suite 2130, New York, NY 10004, or such other location as may be mutually acceptable, at 10:00 a.m. Eastern Time, on the second (or if the Shares and/or Pre-Funded Warrants and Warrants are priced, as contemplated by Rule 15c6-1(c) under the Exchange Act, after 4:30 p.m. Eastern time, the third) full business day following the date hereof, or at such other time and date as the Underwriter and the Company determine pursuant to Rule 15c6-1(a) under the Exchange Act. The time and date of delivery of the Shares and/or Pre-Funded Warrants and Warrants is referred to herein as the "Closing Date." Delivery of the Shares shall be made through the facilities of the Depository Trust Company designated by the Underwriter. Delivery of the Pre-Funded Warrants and Warrants shall be made by physical delivery to be received or directed by the Underwriter (or by an applicable investor purchasing Pre-Funded Warrants and Warrants) no later than one (1) business day following the Closing Date. In the event that an investor purchasing Pre-Funded Warrants or Warrants delivers an Exercise Notice (as defined in the Pre-Funded Warrants and Warrants) prior to the Closing Date, to exercise any Pre-Funded Warrants or Warrants between the date hereof and the Closing Date, the Company shall deliver the Pre-Funded Warrant Shares or Warrant Shares, as applicable, with respect to any exercise to such investor on the Closing Date as specified in such Exercise Notice.

5. Covenants.

(a) The Company covenants and agrees with the Underwriter as follows:

(i) The Company shall prepare the Prospectus in a form approved by the Underwriter and file such Prospectus pursuant to Rule 424(b) under the Securities Act not later than the Commission's close of business on the second (2nd) business day following the execution and delivery of this Agreement, or, if applicable, such earlier time as may be required by the Rules and Regulations of the Commission.

(ii) During the period beginning on the date hereof and ending on the earlier of (A) such date as determined by the Underwriter that the Prospectus is no longer required by law to be delivered in connection with sales by an underwriter or dealer or (B) the completion of the distribution of the Securities by the Underwriter (the “Prospectus Delivery Period”), prior to amending or supplementing the Registration Statement, including any Rule 462(b) Registration Statement, the Time of Sale Disclosure Package or the Prospectus, the Company shall furnish to the Underwriter for review and comment a copy of each such proposed amendment or supplement, and the Company shall not file any such proposed amendment or supplement to which the Underwriter reasonably objects.

(iii) From the date of this Agreement until the end of the Prospectus Delivery Period, the Company shall promptly advise the Underwriter in writing (A) of the receipt of any comments of, or requests for additional or supplemental information from, the Commission, (B) of the time and date of any filing of any post-effective amendment to the Registration Statement or any amendment or supplement to the Time of Sale Disclosure Package, the Prospectus or any Issuer Free Writing Prospectus, (C) of the time and date that any post-effective amendment to the Registration Statement becomes effective and (D) of the issuance by the Commission of any stop order suspending the effectiveness of the Registration Statement or of any order preventing or suspending its use or the use of the Time of Sale Disclosure Package, the Prospectus or any Issuer Free Writing Prospectus, or of any proceedings to remove, suspend or terminate from listing or quotation the Common Stock from any securities exchange upon which it is listed for trading or included or designated for quotation, or of the threatening or initiation of any proceedings for any of such purposes. If the Commission shall enter any such stop order at any time during the Prospectus Delivery Period, the Company will use its reasonable efforts to obtain the lifting of such order at the earliest possible moment. Additionally, the Company agrees during the Prospectus Delivery Period that it shall comply with the provisions of Rules 424(b), 430A and 430B, as applicable, under the Securities Act and will use its reasonable efforts to confirm that any filings made by the Company under Rule 424(b) or Rule 433 were received in a timely manner by the Commission (without reliance on Rule 424(b)(8) or 164(b) of the Securities Act).

(iv) (A) During the Prospectus Delivery Period, the Company will comply with all requirements imposed upon it by the Securities Act, as now and hereafter amended, and by the Rules and Regulations, as from time to time in force, and by the Exchange Act, as now and hereafter amended, so far as necessary to permit the continuance of sales of or dealings in the Securities as contemplated by the provisions hereof, the Time of Sale Disclosure Package, the Registration Statement and the Prospectus. If during the Prospectus Delivery Period any event occurs as the result of which would cause the Prospectus (or if the Prospectus is not yet available to prospective purchasers, the Time of Sale Disclosure Package) to 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 under which such statement was made, not misleading, or if during such period it is necessary or appropriate in the opinion of the Company or its counsel or the Underwriter or their counsel to amend the Registration Statement or supplement the Prospectus (or if the Prospectus is not yet available to prospective purchasers, the Time of Sale Disclosure Package) to comply with the Securities Act or to file under the Exchange Act any document that would be deemed to be incorporated by reference in the Prospectus in order to comply with the Securities Act or the Exchange Act, the Company will promptly notify the Underwriter, allow the Underwriter the opportunity to provide reasonable comments on such amendment, Prospectus or document, and will amend the Registration Statement or supplement the Prospectus (or if the Prospectus is not yet available to prospective purchasers, the Time of Sale Disclosure Package) or file such document (at the expense of the Company) so as to correct such statement or omission or effect such compliance.

(B) During the Prospectus Delivery Period, if at any time following the issuance of an Issuer Free Writing Prospectus there occurred or occurs an event or development the result of which is that such Issuer Free Writing Prospectus conflicted or would conflict with the information contained in the Registration Statement or any Prospectus or included or would include, when taken together with the Time of Sale Disclosure Package, an untrue statement of a material fact or omitted or would omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances prevailing at that subsequent time, not misleading, the Company has promptly notified or promptly will notify the Underwriter and has promptly amended or will promptly amend or supplement, at its own expense, such Issuer Free Writing Prospectus to eliminate or correct such conflict, untrue statement or omission.

(v) The Company shall take or cause to be taken all necessary action to qualify the Securities for sale under the securities laws of such jurisdictions as the Underwriter reasonably designate and to continue such qualifications in effect so long as required for the distribution of the Securities, except that the Company shall not be required in connection therewith to qualify as a foreign corporation or as a dealer in securities in any jurisdiction in which it is not so qualified, to execute a general consent to service of process in any state or to subject itself to taxation in respect of doing business in any jurisdiction in which it is not otherwise subject.

(vi) The Company shall deliver to the Underwriter and counsel for the Underwriter copies, without charge, of the Registration Statement, the Prospectus, any Issuer Free Writing Prospectus, and all amendments and supplements to such documents, and signed copies of all consents and certificates of experts, in each case as soon as available and in such quantities as the Underwriter may from time to time reasonably request.

(vii) The Company will make generally available to its security holders 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 (which need not be audited) covering a 12-month period that shall satisfy the provisions of Section 11(a) of the Securities Act and Rule 158 of the Rules and Regulations.

(viii) The Company shall use commercially reasonable efforts to maintain the listing of the shares of Common Stock on Nasdaq or a comparable exchange for at least two (2) years from the date of this Agreement unless the Company is acquired, merged out of existence or goes private under Exchange Act Rule 13e-3 during such time.

(ix) For a period of two (2) years from the Closing Date, the Company shall use its commercially reasonable efforts to maintain the registration of the Shares and, when issued, the Pre-Funded Warrant Shares and Warrant Shares under the Exchange Act unless the Company is acquired, merged out of existence or goes private under Exchange Act Rule 13e-3 during such time.

(x) For so long as any Pre-Funded Warrants or Warrants remain outstanding, the Company shall continue to reserve and keep available at all times, free of pre-emptive rights, a sufficient number of authorized shares of Common Stock for the purpose of enabling the Company to effect the issuance of the Pre-Funded Warrant Shares and Warrant Shares, as applicable.

(xi) The Company, whether or not the transactions contemplated hereunder are consummated or this Agreement is terminated, will pay or cause to be paid (A) all expenses incurred in connection with the delivery to the Underwriter of the Securities (including transfer taxes allocated to the respective transferees, all fees and expenses of the registrar and transfer agent of the Securities (if other than the Company) and the cost of preparing and printing warrant certificates), (B) all expenses and fees (including, without limitation, fees and expenses of the Company's counsel) in connection with the preparation, printing, filing, delivery, and shipping of the Registration Statement (including the financial statements therein and all amendments, schedules, and exhibits thereto), the Securities, the Time of Sale Disclosure Package, any Prospectus, any Issuer Free Writing Prospectus and any amendment thereof or supplement thereto, (C) all reasonable filing fees and reasonable fees and disbursements of the Underwriter's counsel incurred in connection with the qualification of the Securities for offering and sale by the Underwriter or by dealers under the securities or blue sky laws of the states and other jurisdictions that the Underwriter shall designate, (D) the fees and expenses of any transfer agent or registrar (E) the reasonable filing fees incident to any required review and approval by FINRA, of the terms of the sale of the Securities, (F) all fees and expenses relating to the listing of the Securities on Nasdaq, (G) the fees and expenses of the Company's accountants, (H) the costs and expenses of the Company relating to investor presentations on any "road show" undertaken in connection with the marketing of the Securities, including, without limitation, expenses associated with the production of road show slides and graphics, fees and expenses of any consultants (not including the Underwriter and its representatives) engaged in connection with the road show presentations, and travel and lodging expenses of the representatives and officers of the Company and any such consultants (not including the Underwriter and its representatives), and (I) all other costs and expenses incident to the performance of its obligations hereunder that are not otherwise specifically provided for herein. The Company will reimburse the Underwriter for its reasonable and documented out-of-pocket expenses incurred in connection with the offer and sale of the Securities contemplated hereby, including the fees and disbursements of its counsel, in an aggregate amount not to exceed \$75,000 without the Company's prior approval.

(xii) The Company intends to apply the net proceeds from the sale of the Securities to be sold by it hereunder for the purposes set forth in the Time of Sale Disclosure Package and in the Prospectus.

(xiii) The Company has not taken and will not take, directly or indirectly, during the Prospectus Delivery Period, any action designed to or which might reasonably be expected to cause or result in, or that has constituted, the stabilization or manipulation of the price of any security of the Company to facilitate the sale or resale of the Securities.

(xiv) The Company represents and agrees that, unless it obtains the prior written consent of the Underwriter, and the Underwriter represents and agrees that, unless it obtains the prior written consent of the Company, it has not made and will not make any offer relating to the Securities that would constitute an Issuer Free Writing Prospectus; provided that the prior written consent of the parties hereto shall be deemed to have been given in respect of the free writing prospectuses included in Schedule II. Any such free writing prospectus set forth on Schedule II and consented to by the Company and the Underwriter is hereinafter referred to as a “Permitted Free Writing Prospectus.” The Company represents that it has treated, or agrees that it will treat, each Permitted Free Writing Prospectus as an “issuer free writing prospectus,” as defined in Rule 433, and has complied or will comply with the requirements of Rule 433 applicable to any Permitted Free Writing Prospectus, including timely Commission filing where required, legending and record-keeping.

(xv) The Company hereby agrees that, without the prior written consent of the Underwriter, it will not, during the period ending 90 days after the date hereof (“Lock-Up Period”), (A) sell, offer to sell, contract or agree to sell, hypothecate, pledge, grant any option to purchase or otherwise dispose of or agree to dispose of, directly or indirectly, or file (or participate in the filing of) a registration statement with the Commission in respect of, or establish or increase a put equivalent position or liquidate or decrease a call equivalent position within the meaning of Section 16 of the Exchange Act with respect to, any Common Stock or any other securities of the Company that are substantially similar to Common Stock, or any securities convertible into or exchangeable or exercisable for, or any warrants or other rights to purchase, the foregoing, (B) enter into any swap or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of Common Stock or any other securities of the Company that are substantially similar to Common Stock, or any securities convertible into or exchangeable or exercisable for, or any warrants or other rights to purchase, the foregoing, whether any such transaction is to be settled by delivery of Common Stock or such other securities, in cash or otherwise or (C) publicly announce an intention to effect any transaction specified in clause (A) or (B). The restrictions contained in the preceding sentence shall not apply to (V) the Securities to be sold hereunder, (W) the issuance of Common Stock upon the exercise of options, equity awards or warrants disclosed as outstanding in the Registration Statement (excluding exhibits thereto), the Time of Sale Disclosure Package or the Prospectus provided that such options or warrants have not been amended since the date of this Agreement to increase the number of such options or warrants or to decrease the exercise price, exchange price or conversion price of such options or warrants (other than in connection with stock splits or combinations) or to extend the term of such securities, (X) the issuance of employee stock options not exercisable during the Lock-Up Period and the grant of restricted stock awards or restricted stock units pursuant to equity incentive plans described in the Registration Statement (excluding exhibits thereto) and the Prospectus, (Y) the filing of registration statements on Form S-8 with respect to the shares of Common Stock reserved for issuance under the Company’s equity incentive plans as in effect from time to time or (Z) the issuances of Common Stock or securities exercisable for, convertible into or exchangeable for Common Stock in connection with any acquisition, collaboration, merger, licensing or other joint venture or strategic transaction involving the Company; provided that in the case of clause (Z), that such issuances shall not be greater than 5% of the total outstanding shares of the Company immediately following the initial closing hereunder and the recipients of such shares of Common Stock agree to be bound by a lockup letter in the form executed by directors, officers and certain stockholders pursuant to Section 6(k) hereof.

(xvi) [Reserved].

(xvii) The Company hereby agrees to engage and maintain, at its expense, a registrar and transfer agent for the Securities.

6. Conditions of the Underwriter’s Obligations. The obligations of each Underwriter hereunder to purchase the Securities are subject to the accuracy, as of the date hereof and at the Closing Date (as if made at the Closing Date), of and compliance with all representations, warranties and agreements of the Company contained herein, the performance by the Company of its obligations hereunder and the following additional conditions:

(a) If filing of the Prospectus, or any amendment or supplement thereto, or any Issuer Free Writing Prospectus, is required under the Securities Act or the Rules and Regulations, the Company shall have filed the Prospectus (or such amendment or supplement) or such Issuer Free Writing Prospectus with the Commission in the manner and within the time period so required (without reliance on Rule 424(b)(8) or 164(b) under the Securities Act); the Registration Statement shall remain effective; no stop order suspending the effectiveness of the Registration Statement or any part thereof, any Rule 462(b) Registration Statement, or any amendment thereof, nor suspending or preventing the use of the Time of Sale Disclosure Package, the Prospectus or any Issuer Free Writing Prospectus shall have been issued; no proceedings for the issuance of such an order

shall have been initiated or threatened by the Commission; any request of the Commission or the Underwriter for additional information (to be included in the Registration Statement, the Time of Sale Disclosure Package, the Prospectus, any Issuer Free Writing Prospectus or otherwise) shall have been complied with to the Underwriter's satisfaction.

(b) Nasdaq shall have raised no objection to the qualification for listing of the Shares, the Pre-Funded Warrant Shares and the Warrant Shares on Nasdaq.

(c) FINRA shall have raised no objection to the fairness and reasonableness of the underwriting terms and arrangements.

(d) The Underwriter shall not have reasonably determined, and advised the Company, that the Registration Statement, the Time of Sale Disclosure Package or the Prospectus, or any amendment thereof or supplement thereto, or any Issuer Free Writing Prospectus, contains an untrue statement of fact which, in the Underwriter's reasonable opinion, is material, or omits to state a fact which, in the Underwriter's reasonable opinion, is material and is required to be stated therein or necessary to make the statements therein not misleading

(e) Between the date hereof and the Closing Date (A) no downgrading shall have occurred in the rating accorded any of the Company's securities by any "nationally recognized statistical rating organization," as that term is defined by the Commission for purposes of Rule 436(g)(2) under the Securities Act, and (B) no such organization shall have publicly announced that it has under surveillance or review, with possible negative implications, its rating of any of the Company's securities.

(f) On the Closing Date, there shall have been furnished to the Underwriter the opinion and negative assurance letter of Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C., corporate counsel for the Company, dated as of the Closing Date and addressed to the Underwriter, in form and substance reasonably satisfactory to the Underwriter.

(g) On the Closing Date, there shall have been furnished to the Underwriter the opinion of McCarter & English, LLP, intellectual property counsel for the Company, dated as of the Closing Date and addressed to the Underwriter, in form and substance reasonably satisfactory to the Underwriter.

(h) The Underwriter shall have received a letter of KPMG LLP, on the date hereof and on the Closing Date, addressed to the Underwriter, in form and substance reasonably satisfactory to the Underwriter, confirming that they are independent public accountants within the meaning of the Securities Act and are in compliance with the applicable requirements relating to the qualifications of accountants under Rule 2-01 of Regulation S-X of the Commission, and confirming, as of the date of each such letter (or, with respect to matters involving changes or developments since the respective dates as of which specified financial information is given in the Time of Sale Disclosure Package, as of a date not prior to the date hereof or more than five days prior to the date of such letter), the conclusions and findings of said firm, of the type ordinarily included in accountants' "comfort letters" to underwriters, with respect to the financial information, including any financial information contained in the SEC Reports filed by the Company or incorporated by reference in the Registration Statement, the Time of Sale Disclosure Package and the Prospectus, and other matters required by the Underwriter.

(i) On the Closing Date, there shall have been furnished to the Underwriter a certificate, dated the Closing Date and addressed to the Underwriter, signed by the chief executive officer and the chief financial officer of the Company, in their capacity as officers of the Company, to the effect that:

(i) The representations and warranties of the Company in this Agreement that are qualified by materiality or by reference to any Material Adverse Effect are true and correct in all respects, and all other representations and warranties of the Company in this Agreement are true and correct, in all material respects, as if made at and as of the Closing Date, and the Company has complied with all the agreements and satisfied all the conditions on its part to be performed or satisfied at or prior to the Closing Date;

(ii) No stop order or other order (A) suspending the effectiveness of the Registration Statement or any part thereof or any amendment thereof, (B) suspending the qualification of the Securities for offering or sale, or (C) suspending or preventing the use of the Time of Sale Disclosure Package, the Prospectus or any Issuer Free Writing Prospectus, has been issued, and no proceeding for that purpose has been instituted or, to their knowledge, is contemplated by the Commission or any state or regulatory body; and

(iii) There has been no occurrence of any event resulting or reasonably likely to result in a Material Adverse Effect during the period from and after the date of this Agreement and prior to the Closing Date.

(j) On the Closing Date, there shall have been furnished to the Underwriter a certificate, dated the Closing Date and addressed to the Underwriter, signed by the secretary of the Company, in such person's capacity as an officer of the Company, to the effect that: (i) that each of the certificate of incorporation, as amended and the amended and restated bylaws of the Company is true and complete, has not been modified and is in full force and effect; (ii) that the resolutions of the Company's Board of Directors relating to the Offering are in full force and effect and have not been modified; (iii) as to the accuracy and completeness of all correspondence between the Company or its counsel and with each of the Commission and Nasdaq; and (iv) as to the incumbency of the officers of the Company. The documents referred to in such certificate shall be attached to such certificate.

(k) On or before the date hereof, the Underwriter shall have received duly executed "lock-up" agreements, in the form attached hereto as **Exhibit C**, between the Underwriter and each of the parties set forth on **Schedule III** hereto.

(l) The Underwriter shall have received electronic copies of the Pre-Funded Warrants and Warrants executed by the Company.

(m) The Common Stock shall be registered under the Exchange Act and shall be listed on Nasdaq, and the Company shall not have taken any action designed to terminate, or likely to have the effect of terminating, the registration of the Common Stock under the Exchange Act or delisting or suspending from trading the Common Stock from Nasdaq, nor shall the Company have received any information suggesting that the Commission is contemplated terminating such registration or listing.

(n) On the Closing Date, the Shares shall have been delivered via the Depository Trust Company system to the accounts of the Underwriter.

(o) The Company shall have furnished to the Underwriter and its counsel such additional documents, certificates and evidence as the Underwriter or its counsel may have reasonably requested.

If any condition specified in this Section 6 shall not have been fulfilled when and as required to be fulfilled, this Agreement may be terminated by the Underwriter by notice to the Company at any time at or prior to the Closing Date and such termination shall be without liability of any party to any other party, except that Section 5(a)(xi) and Section 7 shall survive any such termination and remain in full force and effect.

7. Indemnification and Contribution.

(a) The Company agrees to indemnify, defend and hold harmless the Underwriter, its affiliates, directors and officers and employees, and each person, if any, who controls an Underwriter within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act, from and against any losses, claims, damages or liabilities to which the Underwriter or such person may become subject, under the Securities Act or otherwise (including in settlement of any litigation if such settlement is effected with the written consent of the Company), insofar as such losses, claims, damages or liabilities (or actions in respect thereof) arise out of or are based upon (i) an untrue statement or alleged untrue statement of a material fact contained in the Registration Statement, including the information deemed to be a part of the Registration Statement at the time of effectiveness and at any subsequent time pursuant to Rules 430A and 430B of the Rules and Regulations, or arise out of or are based upon the omission from the Registration Statement, or alleged omission to state therein, a material fact required to be stated therein or necessary to make the statements therein not misleading, (ii) an untrue statement or alleged untrue statement of a material fact contained in the Time of Sale Disclosure Package, the Prospectus, or any amendment or supplement thereto (including any documents filed under the Exchange Act and deemed to be incorporated by reference into the Registration Statement or the Prospectus), or any Issuer Free Writing Prospectus or the Marketing Materials, or arising out of or based upon the omission or alleged omission to state therein a material fact required to be stated therein or necessary to make the statements therein, in light of the circumstances under which they were made, not misleading, (iii) in whole or in part, any inaccuracy in the representations and warranties of the Company contained herein, or (iv) in whole or in part, any failure of the Company to perform its obligations hereunder or under law, and will reimburse the Underwriter for any legal or other expenses reasonably incurred by it in connection with evaluating, investigating or defending against such loss, claim, damage, liability or action (or any legal or other expense reasonably incurred in connection with the

evaluation, investigation or defense thereof); *provided, however*, that the Company shall not be liable in any such case to the extent that any such loss, claim, damage, liability or action arises out of or is based upon an untrue statement or alleged untrue statement or omission or alleged omission made in the Registration Statement, the Time of Sale Disclosure Package, the Prospectus, or any amendment or supplement thereto or any Issuer Free Writing Prospectus, in reliance upon and in conformity with the Underwriter's Information.

(b) The Underwriter will indemnify, defend and hold harmless the Company, its affiliates, directors, officers and employees, and each person, if any, who controls the Company within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act, from and against any losses, claims, damages or liabilities to which the Company may become subject, under the Securities Act or otherwise (including in settlement of any litigation, if such settlement is effected with the written consent of such Underwriter), insofar as such losses, claims, damages or liabilities (or actions in respect thereof) arise out of or are based upon an untrue statement or alleged untrue statement of a material fact contained in the Registration Statement, the Time of Sale Disclosure Package, the Prospectus, or any amendment or supplement thereto, any Issuer Free Writing Prospectus or any "issuer information" filed or required to be filed pursuant to Rule 433(d) under the Act, or arise out of or are based upon the omission or alleged omission to state therein a material fact required to be stated therein or necessary to make the statements therein not misleading, in each case to the extent, but only to the extent, that such untrue statement or alleged untrue statement or omission or alleged omission was made in the Registration Statement, the Time of Sale Disclosure Package, the Prospectus, or any amendment or supplement thereto or any Issuer Free Writing Prospectus or any "issuer information" filed or required to be filed pursuant to Rule 433(d) under the Act in reliance upon and in conformity with the Underwriter's Information, and will reimburse the Company for any legal or other expenses reasonably incurred by the Company in connection with defending against any such loss, claim, damage, liability or action.

(c) Promptly after receipt by an indemnified party under subsection (a) or (b) above of notice of the commencement of any action, such indemnified party shall, if a claim in respect thereof is to be made against the indemnifying party under such subsection, notify the indemnifying party in writing of the commencement thereof; but the failure to notify the indemnifying party shall not relieve the indemnifying party from any liability that it may have to any indemnified party except to the extent such indemnifying party has been materially prejudiced by such failure. In case any such action shall be brought against any indemnified party, it shall notify the indemnifying party of the commencement thereof, and the indemnifying party shall be entitled to participate in, and, to the extent that it shall wish, jointly with any other indemnifying party similarly notified, to assume the defense thereof, with counsel reasonably satisfactory to such indemnified party, and after notice from the indemnifying party to such indemnified party of the indemnifying party's election so to assume the defense thereof, the indemnifying party shall not be liable to such indemnified party under such subsection for any legal or other expenses subsequently incurred by such indemnified party in connection with the defense thereof; *provided, however*, that if (i) 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, (ii) 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 (iii) 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, the indemnified party shall have the right to employ a single counsel to represent it in any claim in respect of which indemnity may be sought under subsection (a) or (b) of this Section 7, in which event the reasonable fees and expenses of such separate counsel shall be borne by the indemnifying party or parties and reimbursed to the indemnified party as incurred.

The indemnifying party under this Section 7 shall not be liable for any settlement of any proceeding effected without its written consent, but if settled with such consent or if there be a final judgment for the plaintiff, the indemnifying party agrees to indemnify the indemnified party against any loss, claim, damage, liability or expense by reason of such settlement or judgment. No indemnifying party shall, without the prior written consent of the indemnified party, effect any settlement, compromise or consent to the entry of judgment in any pending or threatened action, suit or proceeding in respect of which any indemnified party is a party or could be named and indemnity was or would be sought hereunder by such indemnified party, unless such settlement, compromise or consent (a) includes an unconditional release of such indemnified party from all liability for claims that are the subject matter of such action, suit or proceeding and (b) 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) If the indemnification provided for in this Section 7 is unavailable or insufficient to hold harmless an indemnified party under subsection (a) or (b) above, then each indemnifying party shall contribute to the amount paid or payable by such indemnified party as a result of the losses, claims, damages or liabilities referred to in subsection (a) or (b) above, (i) in such proportion as is appropriate to reflect the relative benefits received by the Company on the one hand and the Underwriter on the other from the offering and sale of the Securities or (ii) if the allocation provided by clause (i) above is not permitted by applicable law, in such proportion as is appropriate to reflect not only the relative benefits referred to in clause (i) above but also the relative fault of the Company on the one hand and the Underwriter on the other in connection with the statements or omissions that resulted in such losses, claims, damages or liabilities, as well as any other relevant equitable considerations. The relative benefits received by the Company on the one hand and the Underwriter on the other shall be deemed to be in the same proportion as the total net proceeds from the offering (before deducting expenses) received by the Company bear to the total underwriting discounts and commissions received by the Underwriter, in each case as set forth in the table on the cover page of the Prospectus. The relative fault shall be determined by reference to, among other things, whether the untrue or alleged untrue statement of a material fact or the omission or alleged omission to state a material fact relates to information supplied by the Company or the Underwriter and the parties' relevant intent, knowledge, access to information and opportunity to correct or prevent such untrue statement or omission. The Company and the Underwriter agree that it would not be just and equitable if contributions pursuant to this subsection (d) were to be determined by pro rata allocation or by any other method of allocation that does not take account of the equitable considerations referred to in the first sentence of this subsection (d). The amount paid by an indemnified party as a result of the losses, claims, damages or liabilities referred to in the first sentence of this subsection (d) shall be deemed to include any legal or other expenses reasonably incurred by such indemnified party in connection with investigating or defending against any action or claim that is the subject of this subsection (d). Notwithstanding the provisions of this subsection (d), the Underwriter shall not be required to contribute any amount in excess of the amount of the Underwriter's discounts commissions set forth in the table on the cover of the Prospectus. No person guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) shall be entitled to contribution from any person who was not guilty of such fraudulent misrepresentation.

(e) The obligations of the Company under this Section 7 shall be in addition to any liability that the Company may otherwise have and the benefits of such obligations shall extend, upon the same terms and conditions, to each person, if any, who controls the Underwriter within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act; and the obligations of the Underwriter under this Section 7 shall be in addition to any liability that the Underwriter may otherwise have and the benefits of such obligations shall extend, upon the same terms and conditions, to the Company, and officers, directors and each person who controls the Company within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act.

8. Representations and Agreements to Survive Delivery. All representations, warranties, and agreements of the Company herein or in certificates delivered pursuant hereto, including, but not limited to, the agreements of the Underwriter and the Company contained in Section 5(a)(xi) and Section 7 hereof, shall remain operative and in full force and effect regardless of any investigation made by or on behalf of the Underwriter or any controlling person thereof, or the Company or any of its officers, directors, or controlling persons, and shall survive delivery of, and payment for, the Securities to and by the Underwriter hereunder.

9. Termination of this Agreement.

(a) The Underwriter shall have the right to terminate this Agreement by giving notice to the Company as hereinafter specified at any time at or prior to the Closing Date, if in the discretion of the Underwriter, (i) there has occurred any material adverse change in the securities markets or any event, act or occurrence that has materially disrupted, or in the opinion of the Underwriter, will in the future materially disrupt, the securities markets or there shall be such a material adverse change in general financial, political or economic conditions or the effect of international conditions on the financial markets in the United States is such as to make it, in the judgment of the Underwriter, inadvisable or impracticable to market the Shares or enforce contracts for the sale of the Shares (ii) trading in the Company's Common Stock shall have been suspended by the Commission or Nasdaq or trading in securities generally on Nasdaq, the New York Stock Exchange (NYSE) or NYSE American shall have been suspended, (iii) minimum or maximum prices for trading shall have been fixed, or maximum ranges for prices for securities shall have been required, on Nasdaq, the NYSE or NYSE American, by such exchange or by order of the Commission or any other governmental authority having jurisdiction, (iv) a banking moratorium shall have been declared by federal or state authorities, (v) there shall have occurred any attack on, outbreak or escalation of hostilities or act of terrorism involving the United States, any declaration by the United States of a national emergency or war, any substantial change or development involving a prospective substantial

change in United States or international political, financial or economic conditions or any other calamity or crisis, (vi) the Company suffers any loss by strike, fire, flood, earthquake, accident or other calamity, whether or not covered by insurance, or (vii) in the reasonable judgment of the Underwriter, there has been, since the time of execution of this Agreement or since the respective dates as of which information is given in the Prospectus, any material adverse change in the assets, properties, condition, financial or otherwise, or in the results of operations, business affairs or business prospects of the Company and its subsidiaries considered as a whole, whether or not arising in the ordinary course of business. Any such termination shall be without liability of any party to any other party except that the provisions of Section 5(a)(xi) and Section 7 hereof shall at all times be effective and shall survive such termination.

(b) If the Underwriter elects to terminate this Agreement as provided in this Section, the Company shall be notified promptly by the Underwriter by telephone, confirmed by letter.

10. Notices. Except as otherwise provided herein, all communications hereunder shall be in writing and, if to the Underwriter, shall be mailed, delivered or telecopied to Chardan Capital Markets, LLC, 17 State Street, Suite 2130, New York, NY 10004, Attention: Shai Gerson, E-Mail: sgerson@chardan.com, with a copy to Lowenstein Sandler LLP, 1251 Avenue of the Americas, New York, N.Y. 10020, Attention: Steven M. Skolnick, Esq., E-mail: sskolnick@lowenstein.com; and if to the Company, shall be mailed, delivered or telecopied to it at 301 Binney Street, Suite 402, Cambridge, Massachusetts 02142, E-mail: Brendan.St.Amant@synlogictx.com, Attention: Brendan St. Amant, with a copy to Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C., Attention: Lewis Geffen and Daniel A. Bagliebter, E-mail: LJGeffen@mintz.com and DABagliebter@mintz.com; or in each case to such other address as the person to be notified may have requested in writing. Any 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.

11. Persons Entitled to Benefit of Agreement. This Agreement shall inure to the benefit of and be binding upon the parties hereto and their respective successors and assigns and the controlling persons, officers and directors referred to in Section 7. Nothing in this Agreement is intended or shall be construed to give to any other person, firm or corporation any legal or equitable remedy or claim under or in respect of this Agreement or any provision herein contained. The term “successors and assigns” as herein used shall not include any purchaser, as such purchaser, of any of the Securities from the Underwriter.

12. Absence of Fiduciary Relationship. The Company acknowledges and agrees that: (a) the Underwriter has been retained solely to act as underwriter in connection with the sale of the Securities and that no fiduciary, advisory or agency relationship between the Company and the Underwriter has been created in respect of any of the transactions contemplated by this Agreement, irrespective of whether the Underwriter has advised or are advising the Company on other matters; (b) the price and other terms of the Securities set forth in this Agreement were established by the Company following discussions and arms-length negotiations with the Underwriter and 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) it has been advised that the Underwriter and its affiliates are engaged in a broad range of transactions that may involve interests that differ from those of the Company and that the Underwriters have no obligation to disclose such interest and transactions to the Company by virtue of any fiduciary, advisory or agency relationship; (d) it has been advised that the Underwriter is acting, in respect of the transactions contemplated by this Agreement, solely for the benefit of the Underwriter, and not on behalf of the Company.

13. Entire Agreement. This Agreement represents the entire agreement of the parties and supersedes all prior or contemporaneous written or oral agreements between them concerning the offer and sale of the Securities. Notwithstanding anything herein to the contrary, the M&A/Capital Markets Advisory Agreement dated June 9, 2023, between the Company and the Underwriter, shall continue to be effective and continue to survive and be enforceable by the parties in accordance with its terms, including, but not limited to, Sections 2(c) and 10 thereto.

14. Amendments and Waivers. No supplement, modification or waiver of this Agreement shall be binding unless executed in writing by the party to be bound thereby. The failure of a party to exercise any right or remedy shall not be deemed or constitute a waiver of such right or remedy in the future. No waiver of any of the provisions of this Agreement shall be deemed or shall constitute a waiver of any other provision hereof (regardless of whether similar), nor shall any such waiver be deemed or constitute a continuing waiver unless otherwise expressly provided.

15. Partial Unenforceability. The invalidity or unenforceability of any section, paragraph, clause or provision of this Agreement shall not affect the validity or enforceability of any other section, paragraph, clause or provision.

16. Governing Law. This Agreement shall be governed by and construed in accordance with the law of the State of New York.

17. Submission to Jurisdiction. The Company irrevocably (a) submits to the jurisdiction of any court of the State of New York for the purpose of any suit, action, or other proceeding arising out of this Agreement, or any of the agreements or transactions contemplated by this Agreement, the Registration Statement and the Prospectus (each a "Proceeding"), (b) agrees that all claims in respect of any Proceeding may be heard and determined in any such court, (c) waives, to the fullest extent permitted by law, any immunity from jurisdiction of any such court or from any legal process therein, (d) agrees not to commence any Proceeding other than in such courts, and (e) waives, to the fullest extent permitted by law, any claim that such Proceeding is brought in an inconvenient forum. THE COMPANY (ON BEHALF OF ITSELF AND, TO THE FULLEST EXTENT PERMITTED BY LAW, ON BEHALF OF ITS RESPECTIVE EQUITY HOLDERS AND CREDITORS) HEREBY WAIVES ANY RIGHT IT MAY HAVE TO A TRIAL BY JURY IN RESPECT OF ANY CLAIM BASED UPON, ARISING OUT OF OR IN CONNECTION WITH THIS AGREEMENT AND THE TRANSACTIONS CONTEMPLATED BY THIS AGREEMENT, THE REGISTRATION STATEMENT, AND THE PROSPECTUS.

18. Counterparts. This Agreement may be executed and delivered (including by facsimile transmission and electronic mail attaching a portable document file (.pdf)) in one or more counterparts and, if executed in more than one counterpart, the executed counterparts shall each be deemed to be an original and all such counterparts shall together constitute one and the same instrument.

[Signature Page Follows]

Please sign and return to the Company the enclosed duplicates of this Agreement whereupon this Agreement will become a binding agreement between the Company and the Underwriter in accordance with its terms.

Very truly yours,

SYNLOGIC, INC.

By: _____
Name: [•]
Title: [•]

Confirmed as of the date first above-mentioned:

CHARDAN CAPITAL MARKETS, LLC

By: _____
Name: [•]
Title: [•]

SCHEDULE I

	<u>Number of Shares</u>	<u>Number of Pre- Funded Warrants</u>	<u>Number of Warrants</u>
Chardan Capital Markets, LLC	[•]	[•]	[•]

SCHEDULE II

Free Writing Prospectus

SCHEDULE IV

Testing-the-Waters Communications

[None.]

FORM OF PRE-FUNDED WARRANT

SYNLOGIC, INC.

PRE-FUNDED WARRANT TO PURCHASE COMMON STOCK

FORM OF COMMON WARRANT

SYNLOGIC, INC.

WARRANT TO PURCHASE COMMON STOCK

FORM OF LOCK-UP AGREEMENT

FORM OF PRE-FUNDED WARRANT

SYNLOGIC, INC.

PRE-FUNDED WARRANT TO PURCHASE COMMON STOCK

Warrant No.: []

Number of Shares of Common Stock: []

Date of Issuance: [] (“**Issuance Date**”)

Synlogic, Inc., a Delaware corporation (the “**Company**”), hereby certifies that, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, [], the registered holder hereof or its permitted assigns (the “**Holder**”), is entitled, subject to the terms set forth below, to purchase from the Company, at the Exercise Price (as defined below) then in effect, at any time or times on or after [] (the “**Initial Exercisability Date**”), until exercised in full (the “**Termination Date**”), [] ([]) fully paid non-assessable shares of Common Stock (as defined below), subject to adjustment as provided herein (the “**Warrant Shares**”). Except as otherwise defined herein, capitalized terms in this Warrant to Purchase Common Stock (including any Pre-Funded Warrants to Purchase Common Stock issued in exchange, transfer or replacement hereof, this “**Warrant**”), shall have the meanings set forth in Section 16. This Warrant is one of the Pre-Funded Warrants to Purchase Common Stock (the “**Warrants**”) issued pursuant to (i) that certain Underwriting Agreement, dated as of _____, 2023 (the “**Subscription Date**”) by and between the Company and Chardan Capital Markets, LLC, (ii) the Company’s Registration Statement on Form S-1 (File number 333-274421) (the “**Registration Statement**”) under the Securities Act of 1933, as amended (the “**Securities Act**”) and (iii) the Company’s prospectus dated as of _____, 2023.

1. EXERCISE OF WARRANT.

(a) Mechanics of Exercise. Subject to the terms and conditions hereof (including, without limitation, the limitations set forth in Section 1(f)), this Warrant may be exercised by the Holder at any time or times on or after the Initial Exercisability Date, in whole or in part, by delivery (whether via electronic mail or otherwise) of a written notice, in the form attached hereto as Annex A (the “**Exercise Notice**”), of the Holder’s election to exercise this Warrant. Within one (1) Trading Day following the delivery of the Exercise Notice, the Holder shall make payment to the Company of an amount equal to the Exercise Price in effect on the date of such exercise multiplied by the number of Warrant Shares as to which this Warrant is being exercised (the “**Aggregate Exercise Price**”) in cash by wire transfer of immediately available funds or, if the provisions of Section 1(d) are applicable, by notifying the Company that this Warrant is being exercised pursuant to a Cashless Exercise (as defined in Section 1(d)). The Holder shall not be required to deliver the original Warrant in order to effect an exercise hereunder, nor shall any ink-original signature or medallion guarantee (or other type of guarantee or notarization) with respect to any Exercise Notice be required. Execution and delivery of the Exercise Notice with respect to less than all of the Warrant Shares shall have the same effect as cancellation of the original Warrant and issuance of a new Warrant evidencing the right to purchase the remaining number of Warrant Shares and the Holder shall not be required to physically surrender this Warrant to the Company until the Holder has purchased all of the Warrant Shares available hereunder and the Warrant has been exercised in full, in which case, the Holder shall surrender this Warrant to the Company for cancellation within three (3) Trading Days of the date on which the final Exercise Notice is delivered to the Company. On or before the first (1st) Trading Day following the date on which the Holder has delivered the applicable Exercise Notice, the Company shall transmit by electronic mail an acknowledgment of confirmation of receipt of the Exercise Notice, in the form attached to the Exercise Notice, to the Holder and the Company’s transfer agent (the “**Transfer Agent**”). So long as the Holder delivers the Aggregate Exercise Price (or notice of a Cashless Exercise, if applicable) on or prior to the first (1st) Trading Day following the date on which the Exercise Notice has been delivered to the Company, then on or prior to the earlier of (i) the second (2nd) Trading Day and (ii) the number of Trading Days comprising the Standard Settlement Period, in each case following the date on which the Exercise Notice has been delivered to the Company, or, if the Holder does not deliver the Aggregate Exercise Price (or notice of a Cashless Exercise, if applicable) on or prior to the first (1st) Trading Day following the date on which the Exercise Notice has been delivered to the Company, then on or prior to the first (1st) Trading Day following the date on which the Aggregate Exercise Price (or notice of a Cashless Exercise) is delivered (such earlier date, or if later, the earliest day on which the Company is required to deliver Warrant Shares pursuant to this Section 1(a), the “**Share Delivery Date**”), the Company shall (X) provided that the Transfer Agent is participating in the Depository Trust Company (“**DTC**”) Fast Automated Securities Transfer

Program (“FAST”), credit such aggregate number of Warrant Shares to which the Holder is entitled pursuant to such exercise to the Holder’s or its designee’s balance account with DTC through its Deposit / Withdrawal At Custodian system, or (Y) if the Transfer Agent is not participating in FAST, issue and dispatch by overnight courier to the physical address or email address as specified in the Exercise Notice, a certificate or evidence of a credit of book-entry shares, registered in the name of the Holder or its designee, for the number of Warrant Shares to which the Holder is entitled pursuant to such exercise. The Company shall be responsible for all fees and expenses of the Transfer Agent and all fees and expenses with respect to the issuance of Warrant Shares via DTC, if any, including without limitation for same day processing. Upon delivery of the Exercise Notice, the Holder shall be deemed for all corporate purposes to have become the holder of record and beneficial owner of the Warrant Shares with respect to which this Warrant has been exercised, irrespective of the date such Warrant Shares are credited to the Holder’s DTC account or the date of delivery of the certificates evidencing such Warrant Shares, as the case may be. If this Warrant is physically delivered to the Company in connection with any exercise pursuant to this Section 1(a) and the number of Warrant Shares represented by this Warrant submitted for exercise is greater than the number of Warrant Shares being acquired upon an exercise, then the Company shall as soon as practicable and in no event later than three (3) Trading Days after any exercise and at its own expense, issue and deliver to the Holder (or its designee) a new Warrant (in accordance with Section 7(d)) representing the right to purchase the number of Warrant Shares issuable immediately prior to such exercise under this Warrant, less the number of Warrant Shares with respect to which this Warrant is exercised. No fractional Warrant Shares are to be issued upon the exercise of this Warrant, but rather the number of Warrant Shares to be issued shall be rounded down to the nearest whole number. The Company shall pay any and all transfer, stamp, issuance and similar taxes, costs and expenses (including, without limitation, fees and expenses of the Transfer Agent) which may be payable with respect to the issuance and delivery of Warrant Shares upon exercise of this Warrant; provided, that the Company shall not be required to pay any tax or governmental charge that may be imposed with respect to any applicable withholding or the issuance or delivery of the Warrant Shares to any Person other than the Holder, and no such issuance or delivery shall be made unless and until the Person requesting such issuance has paid to the Company the amount of any such tax, or has established to the satisfaction of the Company that such tax has been paid. The Company’s obligations to issue and deliver Warrant Shares in accordance with the terms and subject to the conditions hereof are absolute and unconditional, irrespective of any action or inaction by the Holder to enforce the same, any waiver or consent with respect to any provision hereof, the recovery of any judgment against any Person or any action to enforce the same, or any setoff, counterclaim, recoupment, limitation or termination; provided, however, that the Company shall not be required to deliver Warrant Shares with respect to an exercise prior to the Holder’s delivery of the Aggregate Exercise Price (or notice of a Cashless Exercise) with respect to such exercise.

(b) Exercise Price. The aggregate exercise price of this Warrant, except for a nominal exercise price of \$0.001 per Warrant Share, was pre-funded to the Company on or prior to the Initial Exercisability Date and, consequently, no additional consideration (other than the nominal exercise price of \$0.001 per Warrant Share) shall be required to be paid by the Holder to any Person to affect any exercise of this Warrant. The Holder shall not be entitled to the return or refund of all, or any portion, of such pre-paid aggregate Exercise Price under any circumstance or for any reason whatsoever, including in the event this Warrant shall not have been exercised prior to the Termination Date. The exercise price per share of Common Stock under this Warrant shall be \$0.001, subject to adjustment hereunder (the “**Exercise Price**”).

(c) Company’s Failure to Timely Deliver Securities. If either (I) the Company shall fail for any reason or for no reason to issue to the Holder on or prior to the applicable Share Delivery Date, if (x) the Transfer Agent is not participating in FAST, a certificate or evidence of a book-entry credit for the number of shares of Common Stock to which the Holder is entitled and register such Common Stock on the Company’s share register or (y) the Transfer Agent is participating in FAST, to credit the Holder’s balance account with DTC, for such number of shares of Common Stock to which the Holder is entitled upon the Holder’s exercise of this Warrant or (II) a registration statement (which may be the Registration Statement) covering the issuance of the Warrant Shares that are the subject of the Exercise Notice (the “**Exercise Notice Warrant Shares**”) is not available for the issuance of such Exercise Notice Warrant Shares and (x) the Company fails to promptly, but in no event later than one (1) Business Day after such registration statement becomes unavailable, to so notify the Holder and (y) the Company is unable to deliver the Exercise Notice Warrant Shares electronically without any restrictive legend by crediting such aggregate number of Exercise Notice Warrant Shares to the Holder’s or its designee’s balance account with DTC through its Deposit / Withdrawal At Custodian system (the event described in the immediately foregoing clause (II) is hereinafter referred as a “**Notice Failure**” and together with the event described in clause (I) above, an “**Exercise Failure**”), then, in addition to all other remedies available to the Holder, if on or prior to the applicable Share Delivery Date either (I) if

the Transfer Agent is not participating in FAST, the Company shall fail to issue and deliver a certificate or evidence of a book-entry credit to the Holder and register such shares of Common Stock on the Company's share register or, if the Transfer Agent is participating in FAST, credit the Holder's balance account with DTC for the number of shares of Common Stock to which the Holder is entitled upon the Holder's exercise hereunder or pursuant to the Company's obligation pursuant to clause (ii) below or (II) if a Notice Failure occurs, and if on or after such date the Holder is required by its broker to purchase (in an open market transaction or otherwise) or the Holder's brokerage firm otherwise purchases, shares of Common Stock to deliver in satisfaction of a sale by the Holder of the Warrant Shares which the Holder anticipated receiving upon such exercise (a "**Buy-In**"), then the Company shall, within three (3) Trading Days after the Holder's request, (A) pay in cash to the Holder the amount, if any, by which (x) the Holder's total purchase price (including brokerage commissions and other out-of-pocket expenses, if any) for the shares of Common Stock so purchased exceeds (y) the amount obtained by multiplying (1) the number of Warrant Shares that the Company was required to deliver to the Holder in connection with the exercise at issue times (2) the price at which the sell order giving rise to such purchase obligation was executed, and (B) at the option of the Holder, either reinstate the portion of the Warrant and equivalent number of Warrant Shares for which such exercise was not honored (in which case such exercise shall be deemed rescinded) or deliver to the Holder the number of shares of Common Stock that would have been issued had the Company timely complied with its exercise and delivery obligations hereunder. For example, if the Holder purchases Common Stock having a total purchase price of \$11,000 to cover a Buy-In with respect to an attempted exercise of shares of Common Stock with an aggregate sale price giving rise to such purchase obligation of \$10,000, under clause (A) of the immediately preceding sentence the Company shall be required to pay the Holder \$1,000. The Holder shall provide the Company written notice indicating the amounts payable to the Holder in respect of the Buy-In and, upon request of the Company, evidence of the amount of such loss. Nothing herein shall limit a Holder's right to pursue any other remedies available to it hereunder, at law or in equity including, without limitation, a decree of specific performance and/or injunctive relief with respect to the Company's failure to timely deliver shares of Common Stock upon exercise of the Warrant as required pursuant to the terms hereof. The Company's current transfer agent participates in FAST. In the event that the Company changes transfer agents while this Warrant is outstanding, the Company shall use commercially reasonable efforts to select a transfer agent that participates in FAST. While this Warrant is outstanding, the Company shall cause its transfer agent to participate in FAST with respect to this Warrant. In addition to the foregoing rights, (i) if the Company fails to deliver the applicable number of Warrant Shares upon an exercise pursuant to Section 1 by the applicable Share Delivery Date, then the Holder shall have the right to rescind such exercise in whole or in part and retain and/or have the Company return, as the case may be, any portion of this Warrant that has not been exercised pursuant to such Exercise Notice; provided that the rescission of an exercise shall not affect the Company's obligation to make any payments that have accrued prior to the date of such notice pursuant to this Section 1(c) or otherwise, and (ii) if a registration statement (which may be the Registration Statement) covering the issuance of the Warrant Shares that are subject to an Exercise Notice is not available for the issuance of such Exercise Notice Warrant Shares and the Holder has submitted an Exercise Notice prior to receiving notice of the non-availability of such registration statement and the Company has not already delivered the Warrant Shares underlying such Exercise Notice electronically without any restrictive legend by crediting such aggregate number of Warrant Shares to which the Holder is entitled pursuant to such exercise to the Holder's or its designee's balance account with DTC through its Deposit / Withdrawal At Custodian system, the Holder shall have the option, by delivery of notice to the Company, to (x) rescind such Exercise Notice in whole or in part and retain or have returned, as the case may be, any portion of this Warrant that has not been exercised pursuant to such Exercise Notice; provided that the rescission of an Exercise Notice shall not affect the Company's obligation to make any payments that have accrued prior to the date of such notice pursuant to this Section 1(c) or otherwise, and/or (y) switch some or all of such Exercise Notice from a cash exercise to a Cashless Exercise. In addition to the foregoing, if the Company fails for any reason to deliver to the Holder the Warrant Shares subject to an Exercise Notice by the second Trading Day following the Share Delivery Date, the Company shall pay to the Holder, in cash, as liquidated damages and not as a penalty, for each \$1,000 of Warrant Shares subject to such exercise (based on the Weighted Average Price of the Common Stock on the date of the applicable Exercise Notice), \$10 per Trading Day (increasing to \$20 per Trading Day on the third Trading Day after such liquidated damages begin to accrue) for each Trading Day after the second Trading Day following such Share Delivery Date until such Warrant Shares are delivered or Holder rescinds such exercise.

(d) **Cashless Exercise.** Notwithstanding anything contained herein to the contrary, if a registration statement (which may be the Registration Statement) covering the issuance of the Exercise Notice Warrant Shares is not available for the issuance of such Exercise Notice Warrant Shares, the Holder may, in its sole discretion, exercise this Warrant in whole or in part and, in lieu of making the cash payment otherwise contemplated to be made to the Company upon such exercise in payment of the Aggregate Exercise Price, elect instead to receive upon such exercise the "Net Number" of shares of Common Stock determined according to the following formula (a "**Cashless Exercise**"):

$$\text{Net Number} = \frac{(A \times B) - (A \times C)}{B}$$

For purposes of the foregoing formula:

A= the total number of shares with respect to which this Warrant is then being exercised.

B= as applicable: (i) the Weighted Average Price of the Common Stock on the Trading Day immediately preceding the date of the applicable Exercise Notice if such Exercise Notice is (1) both executed and delivered pursuant to Section 1(a) hereof on a day that is not a Trading Day or (2) both executed and delivered pursuant to Section 1(a) hereof on a Trading Day prior to the opening of “regular trading hours” (as defined in Rule 600(b)(64) of Regulation NMS promulgated under the federal securities laws) on such Trading Day, (ii) at the option of the Holder, either (y) the Weighted Average Price on the Trading Day immediately preceding the date of the applicable Exercise Notice or (z) the Bid Price of the Common Stock as of the time of the Holder’s execution of the applicable Exercise Notice if such Exercise Notice is executed during “regular trading hours” on a Trading Day and is delivered within two (2) hours thereafter (including until two (2) hours after the close of “regular trading hours” on a Trading Day) pursuant to Section 1(a) hereof or (iii) the Weighted Average Price of the Common Stock on the date of the applicable Exercise Notice if the date of such Exercise Notice is a Trading Day and such Exercise Notice is both executed and delivered pursuant to Section 1(a) hereof after the close of “regular trading hours” on such Trading Day.

C= \$0.001, as adjusted hereunder.

If Warrant Shares are issued in such a cashless exercise, the Company acknowledges and agrees that in accordance with Section 3(a)(9) of the Securities Act, the Warrant Shares shall take on the registered characteristics of the Warrants being exercised, and the holding period of the Warrants being exercised may be tacked on to the holding period of the Warrant Shares. The Company agrees not to take any position contrary to this Section 1(d). Without limiting the rights of a Holder to receive Warrant Shares on a “cashless exercise,” and to receive the cash payments contemplated pursuant to Sections 1(c) and 4(b), in no event will the Company be required to net cash settle a Warrant exercise.

(e) Disputes. In the case of a dispute as to the determination of the Exercise Price or the arithmetic calculation of the Warrant Shares, the Company shall promptly issue to the Holder the number of Warrant Shares that are not disputed and resolve such dispute in accordance with Section 11.

(f) Beneficial Ownership. Notwithstanding anything to the contrary contained herein, the Company shall not affect the exercise of any portion of this Warrant, and the Holder shall not have the right to exercise any portion of this Warrant, pursuant to the terms and conditions of this Warrant and any such exercise shall be null and void and treated as if never made, to the extent that after giving effect to such exercise, the Holder together with the other Attribution Parties collectively would beneficially own in the aggregate in excess of [4.99/9.99]% (the “**Maximum Percentage**”) of the number of shares of Common Stock outstanding immediately after giving effect to such exercise. For purposes of the foregoing sentence, the aggregate number of shares of Common Stock beneficially owned by the Holder and the other Attribution Parties shall include the number of shares of Common Stock held by the Holder and all other Attribution Parties plus the number of shares of Common Stock issuable upon exercise of this Warrant with respect to which the determination of such sentence is being made, but shall exclude the number of shares of Common Stock which would be issuable upon (A) exercise of the remaining, unexercised portion of this Warrant beneficially owned by the Holder or any of the other Attribution Parties and (B) exercise or conversion of the unexercised or unconverted portion of any other securities of the Company (including, without limitation, any convertible notes or convertible preferred stock or warrants, including the other Warrants) beneficially owned by the Holder or any other Attribution Party subject to a limitation on conversion or exercise analogous to the limitation contained in this Section 1(f). For purposes of this Section 1(f), beneficial ownership shall be calculated in accordance with Section 13(d) of the Securities Exchange Act of 1934, as amended (the “**Exchange Act**”). For purposes of this Warrant, in determining the number of outstanding shares of Common Stock the Holder may acquire upon the exercise of this Warrant without exceeding the Maximum Percentage, the Holder may rely on the number of outstanding shares of Common Stock as

reflected in (x) the Company's most recent Annual Report on Form 10-K, Quarterly Report on Form 10-Q and Current Reports on Form 8-K or other public filing with the Securities and Exchange Commission (the "SEC"), as the case may be, (y) a more recent public announcement by the Company or (z) any other written notice by the Company or the Transfer Agent setting forth the number of shares of Common Stock outstanding (the "Reported Outstanding Share Number"). If the Company receives an Exercise Notice from the Holder at a time when the actual number of outstanding shares of Common Stock is less than the Reported Outstanding Share Number, the Company shall (i) notify the Holder in writing of the number of shares of Common Stock then outstanding and, to the extent that such Exercise Notice would otherwise cause the Holder's beneficial ownership, as determined pursuant to this Section 1(f), to exceed the Maximum Percentage, the Holder must notify the Company of a reduced number of Warrant Shares to be purchased pursuant to such Exercise Notice (the number of shares by which such purchase is reduced, the "Reduction Shares") and (ii) as soon as reasonably practicable, the Company shall return to the Holder any exercise price paid by the Holder for the Reduction Shares. For any reason at any time, upon the written or oral request of the Holder, the Company shall within one (1) Business Day confirm orally and in writing or by electronic mail to the Holder the number of shares of Common Stock then outstanding. In any case, the number of outstanding shares of Common Stock shall be determined after giving effect to the conversion or exercise of securities of the Company, including this Warrant, by the Holder and any other Attribution Party since the date as of which the Reported Outstanding Share Number was reported. In the event that the issuance of Common Stock to the Holder upon exercise of this Warrant results in the Holder and the other Attribution Parties being deemed to beneficially own, in the aggregate, more than the Maximum Percentage of the number of outstanding shares of Common Stock (as determined under Section 13(d) of the Exchange Act), the number of shares so issued by which the Holder's and the other Attribution Parties' aggregate beneficial ownership exceeds the Maximum Percentage (the "Excess Shares") shall be deemed null and void and shall be cancelled ab initio, and the Holder shall not have the power to vote or to transfer the Excess Shares. As soon as reasonably practicable after the issuance of the Excess Shares has been deemed null and void, the Company shall return to the Holder the exercise price paid by the Holder for the Excess Shares. Upon delivery of a written notice to the Company, the Holder may from time to time increase or decrease the Maximum Percentage to any other percentage not in excess of 9.99% as specified in such notice; provided that (i) any such increase in the Maximum Percentage will not be effective until the sixty-first (61st) day after such notice is delivered to the Company and (ii) any such increase or decrease will apply only to the Holder and the other Attribution Parties and not to any other holder of Warrants that is not an Attribution Party of the Holder. For purposes of clarity, the shares of Common Stock issuable pursuant to the terms of this Warrant in excess of the Maximum Percentage shall not be deemed to be beneficially owned by the Holder for any purpose including for purposes of Section 13(d) or Rule 16a-1(a)(1) of the Exchange Act. No prior inability to exercise this Warrant pursuant to this paragraph shall have any effect on the applicability of the provisions of this paragraph with respect to any subsequent determination of exercisability. The provisions of this paragraph shall be construed and implemented in a manner otherwise than in strict conformity with the terms of this Section 1(f) to the extent necessary to correct this paragraph or any portion of this paragraph which may be defective or inconsistent with the intended beneficial ownership limitation contained in this Section 1(f) or to make changes or supplements necessary or desirable to properly give effect to such limitation. The limitation contained in this paragraph may not be waived and shall apply to a successor holder of this Warrant. The Holder hereby acknowledges and agrees that the Company shall be entitled to rely on the representations and the other information set forth in any Exercise Notice and shall not be required to independently verify whether any exercise of this Warrant would cause the Holder (together with the other Attribution Parties) to collectively beneficially own in excess of the Maximum Percentage of the number of shares of Common Stock outstanding after giving effect to such exercise or otherwise trigger the provisions of this Section 1(f).

(g) **Required Reserve Amount.** So long as this Warrant remains outstanding, the Company shall at all times keep reserved for issuance under this Warrant a number of shares of Common Stock at least equal to 100% of the maximum number of shares of Common Stock as shall be necessary to satisfy the Company's obligation to issue shares of Common Stock under the Warrants then outstanding (without regard to any limitations on exercise) (the "Required Reserve Amount"); provided that at no time shall the number of shares of Common Stock reserved pursuant to this Section 1(g) be reduced other than in connection with any exercise of Warrants or such other event covered by Section 2(c) below. The Required Reserve Amount (including, without limitation, each increase in the number of shares so reserved) shall be allocated pro rata among the holders of the Warrants based on the number of shares of Common Stock issuable upon exercise of Warrants held by each holder thereof on the Issuance Date (without regard to any limitations on exercise) (the "Authorized Share Allocation"). In the event that a holder shall sell or otherwise transfer any of such holder's Warrants, each transferee shall be allocated a pro rata portion of such holder's Authorized Share Allocation. Any shares of Common Stock reserved and allocated to any Person which ceases to hold any Warrants shall be allocated to the remaining holders of Warrants, pro rata based on the number of shares of Common Stock issuable upon exercise of the Warrants then held by such holders thereof (without regard to any limitations on exercise).

(h) **Insufficient Authorized Shares.** If at any time while this Warrant remains outstanding the Company does not have a sufficient number of authorized and unreserved shares of Common Stock to satisfy its obligation to reserve for issuance the Required Reserve Amount (an “**Authorized Share Failure**”), then the Company shall promptly take all action reasonably necessary to increase the Company’s authorized shares of Common Stock to an amount sufficient to allow the Company to reserve the Required Reserve Amount for this Warrant then outstanding. Without limiting the generality of the foregoing sentence, as soon as practicable after the date of the occurrence of an Authorized Share Failure, but in no event later than ninety (90) days after the occurrence of such Authorized Share Failure, the Company shall hold a meeting of its stockholders for the approval of an increase in the number of authorized shares of Common Stock. In connection with such meeting, the Company shall provide each stockholder with a proxy statement and shall use its reasonable best efforts to solicit its stockholders’ approval of such increase in authorized shares of Common Stock and to cause its board of directors to recommend to the stockholders that they approve such proposal. Notwithstanding the foregoing, if at any such time of an Authorized Share Failure, the Company is able to obtain the written consent of a majority of the shares of its issued and outstanding shares of Common Stock to approve the increase in the number of authorized shares of Common Stock, the Company may satisfy this obligation by obtaining such consent and submitting for filing with the SEC an Information Statement on Schedule 14C.

2. **ADJUSTMENT OF EXERCISE PRICE AND NUMBER OF WARRANT SHARES.** The Exercise Price and the number of Warrant Shares shall be adjusted from time to time as follows:

(a) Intentionally omitted.

(b) Intentionally omitted.

(c) **Adjustment Upon Subdivision or Combination of Common Stock.** If the Company at any time on or after the Subscription Date subdivides (by any stock split, stock dividend, recapitalization or otherwise) one or more classes of its outstanding shares of Common Stock into a greater number of shares, the Exercise Price in effect immediately prior to such subdivision will be proportionately reduced and the number of Warrant Shares will be proportionately increased. If the Company at any time on or after the Subscription Date combines (by combination, reverse stock split or otherwise) one or more classes of its outstanding shares of Common Stock into a smaller number of shares, the Exercise Price in effect immediately prior to such combination will be proportionately increased and the number of Warrant Shares will be proportionately decreased. Any adjustment under this Section 2(c) shall become effective at the close of business on the date the subdivision or combination becomes effective.

3. **RIGHTS UPON DISTRIBUTION OF ASSETS.** In addition to any adjustments pursuant to Section 2 above, if, on or after the Subscription Date and on or prior to the Termination Date, the Company shall declare or make any dividend or other distribution of its assets (or rights to acquire its assets) to holders of shares of Common Stock, by way of return of capital or otherwise (including, without limitation, any distribution of cash, stock or other securities, property, options, evidence of indebtedness or any other assets by way of a dividend, spin off, reclassification, corporate rearrangement, scheme of arrangement or other similar transaction) (a “**Distribution**”), at any time after the issuance of this Warrant, then, in each such case, the Holder shall be entitled to participate in such Distribution to the same extent that the Holder would have participated therein if the Holder had held the number of shares of Common Stock acquirable upon complete exercise of this Warrant (without regard to any limitations or restrictions on exercise of this Warrant, including without limitation, the Maximum Percentage) immediately before the date on which a record is taken for such Distribution, or, if no such record is taken, the date as of which the record holders of shares of Common Stock are to be determined for the participation in such Distribution (provided, however, that to the extent that the Holder’s right to participate in any such Distribution would result in the Holder and the other Attribution Parties exceeding the Maximum Percentage, then the Holder shall not be entitled to participate in such Distribution to such extent (and shall not be entitled to beneficial ownership of such shares of Common Stock as a result of such Distribution (and beneficial ownership) to such extent) and the portion of such Distribution shall be held in abeyance for the benefit of the Holder until such time or times as its right thereto would not result in the Holder and the other Attribution Parties exceeding the Maximum Percentage, at which time or times the Holder shall be granted such Distribution (and any Distributions declared or made on such initial Distribution or on any subsequent Distribution held similarly in abeyance) to the same extent as if there had been no such limitation).

4. PURCHASE RIGHTS; FUNDAMENTAL TRANSACTIONS.

(a) Purchase Rights. In addition to any adjustments pursuant to Section 2 above, if at any time on or after the Subscription Date and on or prior to the Termination Date the Company grants, issues or sells any Options, Convertible Securities or rights to purchase stock, warrants, securities or other property pro rata to the record holders of any class of Common Stock (the "**Purchase Rights**"), then the Holder will be entitled to acquire, upon the terms applicable to such Purchase Rights, the aggregate Purchase Rights which the Holder could have acquired if the Holder had held the number of shares of Common Stock acquirable upon complete exercise of this Warrant (without regard to any limitations or restrictions on exercise of this Warrant, including without limitation, the Maximum Percentage) immediately before the date on which a record is taken for the grant, issuance or sale of such Purchase Rights, or, if no such record is taken, the date as of which the record holders of Common Stock are to be determined for the grant, issuance or sale of such Purchase Rights (provided, however, that to the extent that the Holder's right to participate in any such Purchase Right would result in the Holder and the other Attribution Parties exceeding the Maximum Percentage, then the Holder shall not be entitled to participate in such Purchase Right to such extent (and shall not be entitled to beneficial ownership of such Common Stock as a result of such Purchase Right (and beneficial ownership) to such extent) and such Purchase Right to such extent shall be held in abeyance for the benefit of the Holder until such time or times as its right thereto would not result in the Holder and the other Attribution Parties exceeding the Maximum Percentage, at which time or times the Holder shall be granted such right (and any Purchase Right granted, issued or sold on such initial Purchase Right or on any subsequent Purchase Right to be held similarly in abeyance) to the same extent as if there had been no such limitation).

(b) Fundamental Transaction. The Company shall not enter into or be party to a Fundamental Transaction unless the Successor Entity assumes in writing all of the obligations of the Company under this Warrant in accordance with the provisions of this Section 4(b), including agreements to deliver to the Holder in exchange for this Warrant a security of the Successor Entity evidenced by a written instrument substantially similar in form and substance to this Warrant, including, without limitation, which is exercisable for a corresponding number of shares of capital stock equivalent to the shares of Common Stock acquirable and receivable upon exercise of this Warrant (without regard to any limitations on the exercise of this Warrant) prior to such Fundamental Transaction, and with an exercise price which applies the exercise price hereunder to such shares of capital stock (but taking into account the relative value of the shares of Common Stock pursuant to such Fundamental Transaction and the value of such shares of capital stock, such adjustments to the number of shares of capital stock and such exercise price being for the purpose of protecting the economic value of this Warrant immediately prior to the consummation of such Fundamental Transaction). Upon the consummation of each Fundamental Transaction, the Successor Entity shall succeed to, and be substituted for the Company (so that from and after the date of the applicable Fundamental Transaction, the provisions of this Warrant and the other Transaction Documents referring to the "Company" shall refer instead to the Successor Entity), and may exercise every right and power of the Company and shall assume all of the obligations of the Company under this Warrant with the same effect as if such Successor Entity had been named as the Company herein. Upon consummation of each Fundamental Transaction, the Successor Entity shall deliver to the Holder confirmation that there shall be issued upon exercise of this Warrant at any time after the consummation of the applicable Fundamental Transaction, in lieu of the shares of Common Stock (or other securities, cash, assets or other property (except such items still issuable under Sections 3 and 4(a) above, which shall continue to be receivable thereafter)) issuable upon the exercise of this Warrant prior to the applicable Fundamental Transaction, such shares of common stock (or its equivalent) of the Successor Entity (including its Parent Entity) which the Holder would have been entitled to receive upon the happening of the applicable Fundamental Transaction had this Warrant been exercised immediately prior to the applicable Fundamental Transaction (without regard to any limitations on the exercise of this Warrant), as adjusted in accordance with the provisions of this Warrant. Notwithstanding the foregoing, and without limiting Section 1(f) hereof, the Holder may elect, at its sole option, by delivery of written notice to the Company to waive this Section 4(b) to permit the Fundamental Transaction without the assumption of this Warrant. In addition to and not in substitution for any other rights hereunder, prior to the consummation of each Fundamental Transaction pursuant to which holders of shares of Common Stock are entitled to receive securities or other assets with respect to or in exchange for shares of Common Stock (a "**Corporate Event**"), the Company shall make appropriate provision to insure that the Holder will thereafter have the right to receive upon an exercise of this Warrant at any time after the consummation of the applicable Fundamental Transaction but prior to the Termination

Date, in lieu of the shares of the Common Stock (or other securities, cash, assets or other property (except such items still issuable under Sections 3 and 4(a) above, which shall continue to be receivable thereafter)) issuable upon the exercise of the Warrant prior to such Fundamental Transaction, such shares of stock, securities, cash, assets or any other property whatsoever (including warrants or other purchase or subscription rights) (collectively, the “**Corporate Event Consideration**”) which the Holder would have been entitled to receive upon the happening of the applicable Fundamental Transaction had this Warrant been exercised immediately prior to the applicable Fundamental Transaction (without regard to any limitations on the exercise of this Warrant). The provision made pursuant to the preceding sentence shall be in a form and substance reasonably satisfactory to the Requisite Holders. The provisions of this Section 4(b) shall apply similarly and equally to successive Fundamental Transactions and Corporate Events.

5. **NONCIRCUMVENTION.** The Company hereby covenants and agrees that the Company will not, by amendment of its Certificate of Incorporation or Bylaws, or through any reorganization, transfer of assets, consolidation, merger, scheme of arrangement, dissolution, issuance or sale of securities, or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms of this Warrant, and will at all times in good faith carry out all of the provisions of this Warrant and take all action as may be required to protect the rights of the Holder. Without limiting the generality of the foregoing, the Company (i) shall not increase the par value of any shares of Common Stock receivable upon the exercise of this Warrant above the Exercise Price then in effect, (ii) shall take all such actions as may be necessary or appropriate in order that the Company may validly and legally issue fully paid and nonassessable shares of Common Stock upon the exercise of this Warrant, and (iii) shall, so long as any of the Warrants are outstanding, take all action necessary to reserve and keep available out of its authorized and unissued shares of Common Stock, solely for the purpose of effecting the exercise of the Warrants, the number of shares of Common Stock as shall from time to time be necessary to effect the exercise of the Warrants then outstanding (without regard to any limitations on exercise).

6. **WARRANT HOLDER NOT DEEMED A STOCKHOLDER.** Except as otherwise specifically provided herein, the Holder, solely in such Person’s capacity as a holder of this Warrant, shall not be entitled to vote or receive dividends or be deemed the holder of capital stock of the Company for any purpose, nor shall anything contained in this Warrant be construed to confer upon the Holder, solely in such Person’s capacity as the Holder of this Warrant, any of the rights of a stockholder of the Company or any right to vote, give or withhold consent to any corporate action (whether any reorganization, issue of stock, reclassification of stock, consolidation, merger, conveyance or otherwise), receive notice of meetings, receive dividends or subscription rights, or otherwise, prior to the issuance to the Holder of the Warrant Shares which such Person is then entitled to receive upon the due exercise of this Warrant. In addition, nothing contained in this Warrant shall be construed as imposing any liabilities on the Holder to purchase any securities (upon exercise of this Warrant or otherwise) or as a stockholder of the Company, whether such liabilities are asserted by the Company or by creditors of the Company. Notwithstanding this Section 6, the Company shall provide the Holder with copies of the same notices and other information given to the stockholders of the Company generally, contemporaneously with the giving thereof to the stockholders.

7. **REISSUANCE OF WARRANTS.**

(a) **Transfer of Warrant.** If this Warrant is to be transferred, the Holder shall surrender this Warrant to the Company, whereupon the Company will forthwith issue and deliver upon the order of the Holder a new Warrant (in accordance with Section 7(d)), registered as the Holder may request, representing the right to purchase the number of Warrant Shares being transferred by the Holder and, if less than the total number of Warrant Shares then underlying this Warrant is being transferred, a new Warrant (in accordance with Section 7(d)) to the Holder representing the right to purchase the number of Warrant Shares not being transferred. The Company shall not be obligated to pay any tax which may be payable with respect to any transfer (or deemed transfer) arising in connection with the registration of any certificates for Warrant Shares or Warrants in the name of any Person other than the Holder.

(b) **Lost, Stolen or Mutilated Warrant.** Upon receipt by the Company of evidence reasonably satisfactory to the Company of the loss, theft, destruction or mutilation of this Warrant, and, in the case of loss, theft or destruction, of any indemnification undertaking by the Holder to the Company in customary form (but without the obligation to post a bond) and, in the case of mutilation, upon surrender and cancellation of this Warrant, the Company shall execute and deliver to the Holder a new Warrant (in accordance with Section 7(d)) representing the right to purchase the Warrant Shares then underlying this Warrant.

(c) Exchangeable for Multiple Warrants. This Warrant is exchangeable, upon the surrender hereof by the Holder at the principal office of the Company, for a new Warrant or Warrants (in accordance with Section 7(d)) representing in the aggregate the right to purchase the number of Warrant Shares then underlying this Warrant, and each such new Warrant will represent the right to purchase such portion of such Warrant Shares as is designated by the Holder at the time of such surrender.

(d) Issuance of New Warrants. Whenever the Company is required to issue a new Warrant pursuant to the terms of this Warrant, such new Warrant (i) shall be of like tenor with this Warrant, (ii) shall represent, as indicated on the face of such new Warrant, the right to purchase the Warrant Shares then underlying this Warrant (or in the case of a new Warrant being issued pursuant to Section 7(a) or Section 7(c), the Warrant Shares designated by the Holder which, when added to the number of shares of Common Stock underlying the other new Warrants issued in connection with such issuance, does not exceed the number of Warrant Shares then underlying this Warrant), (iii) shall have an issuance date, as indicated on the face of such new Warrant which is the same as the Issuance Date, and (iv) shall have the same rights and conditions as this Warrant.

8. NOTICES. Whenever notice is required to be given under this Warrant, including, without limitation, an Exercise Notice, unless otherwise provided herein, such notice shall be given in writing, (i) if delivered (a) from within the domestic United States, by first-class registered or certified airmail, or nationally recognized overnight express courier, postage prepaid, electronic mail or (b) from outside the United States, by International Federal Express, electronic mail, and (ii) will be deemed given (A) if delivered by first-class registered or certified mail domestic, three (3) Business Days after so mailed, (B) if delivered by nationally recognized overnight carrier, one (1) Business Day after so mailed, (C) if delivered by International Federal Express, two (2) Business Days after so mailed and (D) at the time of transmission, if delivered by electronic mail to each of the email addresses specified in this Section 8 prior to 5:00 p.m. (New York time) on a Trading Day, and (E) the next Trading Day after the date of transmission, if delivered by electronic mail to each of the email addresses specified in this Section 8 on a day that is not a Trading Day or later than 5:00 p.m. (New York time) on any Trading Day, and will be delivered and addressed as follows:

(i) if to the Company, to:

Synlogic, Inc.
301 Binney St., Suite 402
Cambridge, M.A. 02142
Attention: [•]
Email: [•]

(ii) if to the Holder, at such address or other contact information delivered by the Holder to the Company or as is on the books and records of the Company.

The Company shall provide the Holder with prompt written notice of all actions taken pursuant to this Warrant, including in reasonable detail a description of such action and the reason therefor. Without limiting the generality of the foregoing, the Company will give written notice to the Holder (i) promptly upon any adjustment of the Exercise Price, setting forth in reasonable detail, and certifying, the calculation of such adjustment and (ii) at least fifteen (15) days prior to the date on which the Company closes its books or takes a record (A) with respect to any dividend or distribution upon the shares of Common Stock, (B) with respect to any grants, issuances or sales of any Options, Convertible Securities or rights to purchase stock, warrants, securities or other property to holders of shares of Common Stock or (C) for determining rights to vote with respect to any Fundamental Transaction, dissolution or liquidation; provided in each case that such information shall be made known to the public prior to or in conjunction with such notice being provided to the Holder. It is expressly understood and agreed that the time of exercise specified by the Holder in each Exercise Notice shall be definitive and may not be disputed or challenged by the Company.

9. AMENDMENT AND WAIVER. Except as otherwise provided herein, the provisions of this Warrant may be amended or waived and the Company may take any action herein prohibited, or omit to perform any act herein required to be performed by it, only if the Company has obtained the written consent of the Holder.

10. **GOVERNING LAW; JURISDICTION; JURY TRIAL.** This Warrant shall be governed by and construed and enforced in accordance with, and all questions concerning the construction, validity, interpretation and performance of this Warrant shall be governed by, the internal laws of the State of New York, without giving effect to any choice of law or conflict of law provision or rule (whether of the State of New York or any other jurisdictions) that would cause the application of the laws of any jurisdictions other than the State of New York. The Company hereby irrevocably submits to the exclusive jurisdiction of the courts of the State of New York and of the United States of America sitting in The City and County of New York for the adjudication of any dispute hereunder or in connection herewith or with any transaction contemplated hereby or discussed herein, 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. The Company hereby irrevocably waives personal service of process and consents to process being served in any such suit, action or proceeding by mailing a copy thereof to the Company at the address set forth in Section 8(i) above or such other address as the Company subsequently delivers to the Holder and agrees that such service shall constitute good and sufficient service of process and notice thereof. Nothing contained herein shall be deemed to limit in any way any right to serve process in any manner permitted by law. Nothing contained herein shall be deemed or operate to preclude the Holder from bringing suit or taking other legal action against the Company in any other jurisdiction to collect on the Company's obligations to the Holder, to realize on any collateral or any other security for such obligations, or to enforce a judgment or other court ruling in favor of the Holder. If either party shall commence an action, suit or proceeding to enforce any provisions of this Warrant, the prevailing party in such action, suit or proceeding shall be reimbursed by the other party for their reasonable attorneys' fees and other costs and expenses incurred with the investigation, preparation and prosecution of such action or proceeding. **THE COMPANY HEREBY IRREVOCABLY WAIVES ANY RIGHT IT MAY HAVE, AND AGREES NOT TO REQUEST, A JURY TRIAL FOR THE ADJUDICATION OF ANY DISPUTE HEREUNDER OR IN CONNECTION WITH OR ARISING OUT OF THIS WARRANT OR ANY TRANSACTION CONTEMPLATED HEREBY.**

11. **DISPUTE RESOLUTION.** In the case of a dispute as to the determination of the Exercise Price or the arithmetic calculation of the Warrant Shares, the Company shall submit the disputed determinations or arithmetic calculations via electronic mail within two (2) Business Days of receipt of the Exercise Notice or other event giving rise to such dispute, as the case may be, to the Holder. If the Holder and the Company are unable to agree upon such determination or calculation of the Exercise Price or the Warrant Shares within three (3) Business Days of such disputed determination or arithmetic calculation being submitted to the Holder, then the Company shall, within two (2) Business Days submit via electronic mail (a) the disputed determination of the Exercise Price to an independent, reputable investment bank selected by the Company and approved by the Holder or (b) the disputed arithmetic calculation of the Warrant Shares to the Company's independent, outside accountant. The Company shall cause at its expense the investment bank or the accountant, as the case may be, to perform the determinations or calculations and notify the Company and the Holder of the results no later than ten (10) Business Days from the time it receives the disputed determinations or calculations. Such investment bank's or accountant's determination or calculation, as the case may be, shall be binding upon all parties absent demonstrable error.

12. **REMEDIES, OTHER OBLIGATIONS, BREACHES AND INJUNCTIVE RELIEF.** The remedies provided in this Warrant shall be cumulative and in addition to all other remedies available under this Warrant and any other Transaction Documents, at law or in equity (including a decree of specific performance and/or other injunctive relief), and nothing herein shall limit the right of the Holder to pursue actual damages for any failure by the Company to comply with the terms of this Warrant. The Company acknowledges that a breach by it of its obligations hereunder will cause irreparable harm to the Holder and that the remedy at law for any such breach may be inadequate. The Company therefore agrees that, in the event of any such breach or threatened breach, the Holder of this Warrant shall be entitled, in addition to all other available remedies, to an injunction restraining any breach, without the necessity of showing economic loss and without any bond or other security being required.

13. **TRANSFER.** This Warrant and the Warrant Shares may be offered for sale, sold, transferred, pledged or assigned without the consent of the Company.

14. **SEVERABILITY; CONSTRUCTION; HEADINGS.** If any provision of this Warrant is prohibited by law or otherwise determined to be invalid or unenforceable by a court of competent jurisdiction, the provision that would otherwise be prohibited, invalid or unenforceable shall be deemed amended to apply to the broadest extent that it would be valid and enforceable, and the invalidity or unenforceability of such provision shall not affect the validity of the remaining provisions of this Warrant so long as this Warrant as so modified continues to express, without material change, the original intentions of the parties as to the subject matter hereof and the prohibited nature,

invalidity or unenforceability of the provision(s) in question does not substantially impair the respective expectations or reciprocal obligations of the parties or the practical realization of the benefits that would otherwise be conferred upon the parties. The parties will endeavor in good faith negotiations to replace the prohibited, invalid or unenforceable provision(s) with a valid provision(s), the effect of which comes as close as possible to that of the prohibited, invalid or unenforceable provision(s). This Warrant shall be deemed to be jointly drafted by the Company and the Holder and shall not be construed against any Person as the drafter hereof. The headings of this Warrant are for convenience of reference and shall not form part of, or affect the interpretation of, this Warrant.

15. **DISCLOSURE.** Upon receipt or delivery by the Company of any notice in accordance with the terms of this Warrant, unless the Company has in good faith determined that the matters relating to such notice do not constitute material, non-public information relating to the Company or its subsidiaries, the Company shall on or prior to 9:00 a.m. New York City time on the Business Day immediately following such receipt, or contemporaneously upon any such delivery, publicly disclose such material, non-public information on a Current Report on Form 8-K or otherwise. In the event that the Company believes that a notice contains material, non-public information relating to the Company or its subsidiaries, the Company shall indicate to such Holder promptly following receipt of such notice, or contemporaneously with delivery, and in the absence of any such indication, the Holder shall be allowed to presume that all matters relating to such notice do not constitute material, non-public information relating to the Company or its subsidiaries.

16. **CERTAIN DEFINITIONS.** For purposes of this Warrant, the following terms shall have the following meanings:

(a) “**Affiliate**” means, with respect to any Person, any other Person that directly or indirectly controls, is controlled by, or is under common control with, such Person, it being understood for purposes of this definition that “control” of a Person means the power directly or indirectly either to vote 10% or more of the stock having ordinary voting power for the election of directors of such Person or direct or cause the direction of the management and policies of such Person whether by contract or otherwise.

(b) “**Attribution Parties**” means, collectively, the following Persons and entities: (i) any investment vehicle, including, any funds, feeder funds or managed accounts, currently, or from time to time after the Subscription Date, directly or indirectly managed or advised by the Holder’s investment manager or any of its Affiliates or principals, (ii) any direct or indirect Affiliates of the Holder or any of the foregoing, (iii) any Person acting or who could be deemed to be acting as a Group together with the Holder or any of the foregoing and (iv) any other Persons whose beneficial ownership of the Company’s Common Stock would or could be aggregated with the Holder’s and the other Attribution Parties for purposes of Section 13(d) of the Exchange Act. For clarity, the purpose of the foregoing is to subject collectively the Holder and all other Attribution Parties to the Maximum Percentage.

(c) “**Bid Price**” means, for any security as of the particular time of determination, the bid price for such security on the Principal Market as reported by Bloomberg as of such time of determination, or, if the Principal Market is not the principal securities exchange or trading market for such security, the bid price of such security on the principal securities exchange or trading market where such security is listed or traded as reported by Bloomberg as of such time of determination, or if the foregoing does not apply, the bid price of such security in the over-the-counter market on the electronic bulletin board for such security as reported by Bloomberg as of such time of determination, or, if no bid price is reported for such security by Bloomberg as of such time of determination, the average of the bid prices of any market makers for such security as reported in the OTC Link or “pink sheets” by OTC Markets Group Inc. as of such time of determination. If the Bid Price cannot be calculated for a security as of the particular time of determination on any of the foregoing bases, the Bid Price of such security as of such time of determination shall be the fair market value as mutually determined by the Company and the Holder. If the Company and the Holder are unable to agree upon the fair market value of such security, then such dispute shall be resolved in accordance with the procedures in Section 11. All such determinations shall be appropriately adjusted for any stock dividend, stock split, stock combination or other similar transaction during such period.

(d) “**Bloomberg**” means Bloomberg Financial Markets.

(e) “**Business Day**” means any day other than Saturday, Sunday or other day on which commercial banks in The City of New York are authorized or required by law to remain closed.

(f) **“Closing Bid Price”** means, for any security as of any date, the last closing bid price and last closing trade price, respectively, for such security on the Principal Market, as reported by Bloomberg, or, if the Principal Market begins to operate on an extended hours basis and does not designate the closing bid price or the closing trade price, as the case may be, then the last bid price or the last trade price, respectively, of such security prior to 4:00:00 p.m., New York time, as reported by Bloomberg, or, if the Principal Market is not the principal securities exchange or trading market for such security, the last closing bid price or last trade price, respectively, of such security on the principal securities exchange or trading market where such security is listed or traded as reported by Bloomberg, or if the foregoing do not apply, the last closing bid price or last trade price, respectively, of such security in the over-the-counter market on the electronic bulletin board for such security as reported by Bloomberg, or, if no closing bid price or last trade price, respectively, is reported for such security by Bloomberg, the average of the bid prices, or the ask prices, respectively, of any market makers for such security as reported in the OTC Link or “pink sheets” by OTC Markets Group Inc. If the Closing Bid Price cannot be calculated for a security on a particular date on any of the foregoing bases, the Closing Bid Price of such security on such date shall be the fair market value as mutually determined by the Company and the Holder. If the Company and the Holder are unable to agree upon the fair market value of such security, then such dispute shall be resolved pursuant to Section 11. All such determinations shall be appropriately adjusted for any stock dividend, stock split, stock combination, reclassification or other similar transaction during the applicable calculation period.

(g) **“Common Stock”** means (i) the Company’s Common Stock, par value \$0.001 per share, and (ii) any capital stock into which such Common Stock shall have been changed or any capital stock resulting from a reclassification of such Common Stock.

(h) **“Convertible Securities”** means any stock or securities (other than Options) directly or indirectly convertible into or exercisable or exchangeable for shares of Common Stock.

(i) **“Eligible Market”** means The Nasdaq Capital Market, the NYSE American LLC, The Nasdaq Global Select Market, The Nasdaq Global Market or The New York Stock Exchange, Inc.

(j) **“Fundamental Transaction”** means (A) that the Company shall, directly or indirectly, including through subsidiaries, Affiliates or otherwise, in one or more related transactions, (i) consolidate or merge with or into (whether or not the Company is the surviving corporation) another Subject Entity, or (ii) sell, assign, transfer, convey or otherwise dispose of all or substantially all of the properties or assets of the Company or any of its “significant subsidiaries” (as defined in Rule 1-02 of Regulation S-X) to one or more Subject Entities, or (iii) make, or allow one or more Subject Entities to make, or allow the Company to be subject to or have its shares of Common Stock be subject to or party to one or more Subject Entities making, a purchase, tender or exchange offer that is accepted by the holders of at least either (x) 50% of the outstanding shares of Common Stock, (y) 50% of the outstanding shares of Common Stock calculated as if any shares of Common Stock held by all Subject Entities making or party to, or Affiliated with any Subject Entities making or party to, such purchase, tender or exchange offer were not outstanding; or (z) such number of shares of Common Stock such that all Subject Entities making or party to, or Affiliated with any Subject Entity making or party to, such purchase, tender or exchange offer, become collectively the beneficial owners (as defined in Rule 13d-3 under the Exchange Act) of at least 50% of the outstanding shares of Common Stock, or (iv) consummate a stock purchase agreement or other business combination (including, without limitation, a reorganization, recapitalization, spin-off or scheme of arrangement) with one or more Subject Entities whereby all such Subject Entities, individually or in the aggregate, acquire, either (x) at least 50% of the outstanding shares of Common Stock, (y) at least 50% of the outstanding shares of Common Stock calculated as if any shares of Common Stock held by all the Subject Entities making or party to, or Affiliated with any Subject Entity making or party to, such stock purchase agreement or other business combination were not outstanding; or (z) such number of shares of Common Stock such that the Subject Entities become collectively the beneficial owners (as defined in Rule 13d-3 under the Exchange Act) of at least 50% of the outstanding shares of Common Stock, or (v) reorganize, recapitalize or reclassify its shares of Common Stock, (B) that the Company shall, directly or indirectly, including through subsidiaries, Affiliates or otherwise, in one or more related transactions, allow any Subject Entity individually or the Subject Entities in the aggregate to be or become the “beneficial owner” (as defined in Rule 13d-3 under the Exchange Act), directly or indirectly, whether through acquisition, purchase, assignment, conveyance, tender, tender offer, exchange, reduction in outstanding shares of Common Stock, merger, consolidation, business combination, reorganization, recapitalization, spin-off, scheme of arrangement, reorganization, recapitalization or reclassification or otherwise in any manner whatsoever, of either (x) at least 50% of the aggregate ordinary voting power represented

by issued and outstanding shares of Common Stock, (y) at least 50% of the aggregate ordinary voting power represented by issued and outstanding shares of Common Stock not held by all such Subject Entities as of the Subscription Date calculated as if any shares of Common Stock held by all such Subject Entities were not outstanding, or (z) a percentage of the aggregate ordinary voting power represented by issued and outstanding shares of Common Stock or other equity securities of the Company sufficient to allow such Subject Entities to effect a statutory short form merger or other transaction requiring other stockholders of the Company to surrender their Common Stock without approval of the stockholders of the Company or (C) directly or indirectly, including through subsidiaries, Affiliates or otherwise, in one or more related transactions, the issuance of or the entering into any other instrument or transaction structured in a manner to circumvent, or that circumvents, the intent of this definition in which case this definition shall be construed and implemented in a manner otherwise than in strict conformity with the terms of this definition to the extent necessary to correct this definition or any portion of this definition which may be defective or inconsistent with the intended treatment of such instrument or transaction.

(k) “**Group**” means a “group” as that term is used in Section 13(d) of the Exchange Act and as defined in Rule 13d-5 thereunder.

(l) “**Options**” means any rights, warrants or options to subscribe for or purchase shares of Common Stock or Convertible Securities.

(m) “**Parent Entity**” of a Person means an entity that, directly or indirectly, controls the applicable Person, including such entity whose common stock or equivalent equity security is quoted or listed on an Eligible Market (or, if so elected by the Holder, any other market, exchange or quotation system), or, if there is more than one such Person or such entity, the Person or such entity designated by the Holder or in the absence of such designation, such Person or entity with the largest public market capitalization as of the date of consummation of the Fundamental Transaction.

(n) “**Person**” means an individual, a limited liability company, a partnership, a joint venture, a corporation, a trust, an unincorporated organization, any other entity and a government or any department or agency thereof.

(o) “**Principal Market**” means The Nasdaq Capital Market.

(p) “**Requisite Holders**” means the holders of the Warrants representing a majority of the shares of Common Stock underlying the Warrants then outstanding.

(q) “**Standard Settlement Period**” means the standard settlement period, expressed in a number of Trading Days, for the Company’s primary trading market or quotation system with respect to the Common Stock that is in effect on the date of receipt of an applicable Exercise Notice.

(r) “**Subject Entity**” means any Person, Persons or Group or any Affiliate or associate of any such Person, Persons or Group.

(s) “**Successor Entity**” means one or more Person or Persons (or, if so elected by the Holder, the Company or Parent Entity) formed by, resulting from or surviving any Fundamental Transaction or one or more Person or Persons (or, if so elected by the Holder, the Company or the Parent Entity) with which such Fundamental Transaction shall have been entered into.

(t) “**Trading Day**” means any day on which the Common Stock is traded on the Principal Market, or, if the Principal Market is not the principal trading market for the Common Stock, then on the principal securities exchange or securities market on which the Common Stock is then traded.

(u) “**Transaction Documents**” means any agreement entered into by and between the Company and the Holder, as applicable.

(v) “**Weighted Average Price**” means, for any security as of any date, the dollar volume-weighted average price for such security on the Principal Market during the period beginning at 9:30:01 a.m., New York time (or such other time as the Principal Market publicly announces is the official open of trading), and ending at 4:00:00 p.m., New York time (or such other time as the Principal Market publicly announces is the official close of trading), as reported

by Bloomberg through its "Volume at Price" function or, if the foregoing does not apply, the dollar volume-weighted average price of such security in the over-the-counter market on the electronic bulletin board for such security during the period beginning at 9:30:01 a.m., New York time (or such other time as such market publicly announces is the official open of trading), and ending at 4:00:00 p.m., New York time (or such other time as such market publicly announces is the official close of trading), as reported by Bloomberg, or, if no dollar volume-weighted average price is reported for such security by Bloomberg for such hours, the average of the highest Closing Bid Price and the lowest closing ask price of any of the market makers for such security as reported in the OTC Link or "pink sheets" by OTC Markets Group Inc. If the Weighted Average Price cannot be calculated for a security on a particular date on any of the foregoing bases, the Weighted Average Price of such security on such date shall be the fair market value as mutually determined by the Company and the Holder. If the Company and the Holder are unable to agree upon the fair market value of such security, then such dispute shall be resolved pursuant to Section 11 with the term "Weighted Average Price" being substituted for the term "Exercise Price." All such determinations shall be appropriately adjusted for any stock dividend, stock split, stock combination, reclassification or other similar transaction during the applicable calculation period.

[Signature Page Follows]

IN WITNESS WHEREOF, the Company has caused this Warrant to Purchase Common Stock to be duly executed as of the Issuance Date set out above.

Synlogic, Inc.

By: _____
Name: [•]
Title: [•]

[Signature Page to the Pre-Funded Warrant]

Annex A

EXERCISE NOTICE

TO BE EXECUTED BY THE REGISTERED HOLDER TO EXERCISE THIS
PRE-FUNDED WARRANT TO PURCHASE COMMON STOCK
SYNLOGIC, INC.

The undersigned holder hereby exercises the right to purchase _____ shares of Common Stock (“**Warrant Shares**”) of Synlogic, Inc., Delaware corporation (the “**Company**”), evidenced by the attached Pre-Funded Warrant to Purchase Common Stock (the “**Warrant**”). Capitalized terms used herein and not otherwise defined shall have the respective meanings set forth in the Warrant.

1. Form of Exercise Price. The holder intends that payment of the Exercise Price shall be made as:

_____ a “**Cash Exercise**” with respect to _____ Warrant Shares; and/or

_____ a “**Cashless Exercise**” with respect to _____ Warrant Shares.

2. Payment of Exercise Price. In the event that the holder has elected a Cash Exercise with respect to some or all of the Warrant Shares to be issued pursuant hereto, the holder shall pay the Aggregate Exercise Price in the sum of \$_____ to the Company in accordance with the terms of the Warrant.

3. Delivery of Warrant Shares. The Company shall deliver to the holder _____ Warrant Shares in accordance with the terms of the Warrant.

4. Maximum Percentage Representation. Notwithstanding anything to the contrary contained herein, this Exercise Notice shall constitute a representation by the Holder of the Warrant submitting this Exercise Notice that, after giving effect to the exercise provided for in this Exercise Notice, such Holder (together with the other Attribution Parties) will not have beneficial ownership of a number of shares of Common Stock in excess of the Maximum Percentage of the total outstanding shares of Common Stock of the Company as determined pursuant to the provisions of Section 1(f) of the Warrant.

Date: _____, _____

Name of Registered Holder

By: _____

Name:

Title:

ACKNOWLEDGMENT

The Company hereby acknowledges this Exercise Notice and hereby directs American Stock Transfer & Trust Company, LLC to issue the above indicated number of shares of Common Stock on or prior to the applicable Share Delivery Date.

Synlogic, Inc.

By: _____

Name:

Title:

FORM OF COMMON WARRANT

SYNLOGIC, INC.

WARRANT TO PURCHASE COMMON STOCK

Warrant No.: []

Number of Shares of Common Stock: []

Date of Issuance: [], 2023 (“**Issuance Date**”)

Synlogic, Inc., a Delaware corporation (the “**Company**”), hereby certifies that, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, [], the registered holder hereof or its permitted assigns (the “**Holder**”), is entitled, subject to the terms set forth below, to purchase from the Company, at the Exercise Price (as defined below) then in effect, at any time or times on or after [] (the “**Initial Exercisability Date**”), but not after 11:59 p.m., New York time, on the Expiration Date, (as defined below), [] ([]) fully paid and non-assessable shares of Common Stock (as defined below), subject to adjustment as provided herein (the “**Warrant Shares**”). Except as otherwise defined herein, capitalized terms in this Warrant to Purchase Common Stock (including any Warrants to Purchase Common Stock issued in exchange, transfer or replacement hereof, this “**Warrant**”), shall have the meanings set forth in Section 16. This Warrant is one of the Warrants to Purchase Common Stock (the “**Warrants**”) issued pursuant to (i) that certain Underwriting Agreement, dated as of _____, 2023 (the “**Subscription Date**”) by and between the Company and Chardan Capital Markets, LLC, (ii) the Company’s Registration Statement on Form S-1 (File number 333-274421) (the “**Registration Statement**”) under the Securities Act of 1933, as amended (the “**Securities Act**”) and (iii) the Company’s prospectus dated as of _____, 2023.

1. EXERCISE OF WARRANT.

(a) Mechanics of Exercise. Subject to the terms and conditions hereof (including, without limitation, the limitations set forth in Section 1(f)), this Warrant may be exercised by the Holder at any time or times on or after the Initial Exercisability Date, in whole or in part, by delivery (whether via electronic mail or otherwise) of a written notice, in the form attached hereto as Annex A (the “**Exercise Notice**”), of the Holder’s election to exercise this Warrant. Within one (1) Trading Day following the delivery of the Exercise Notice, the Holder shall make payment to the Company of an amount equal to the Exercise Price in effect on the date of such exercise multiplied by the number of Warrant Shares as to which this Warrant is being exercised (the “**Aggregate Exercise Price**”) in cash by wire transfer of immediately available funds or, if the provisions of Section 1(d) are applicable, by notifying the Company that this Warrant is being exercised pursuant to a Cashless Exercise (as defined in Section 1(d)). The Holder shall not be required to deliver the original Warrant in order to effect an exercise hereunder, nor shall any ink-original signature or medallion guarantee (or other type of guarantee or notarization) with respect to any Exercise Notice be required. Execution and delivery of the Exercise Notice with respect to less than all of the Warrant Shares shall have the same effect as cancellation of the original Warrant and issuance of a new Warrant evidencing the right to purchase the remaining number of Warrant Shares and the Holder shall not be required to physically surrender this Warrant to the Company until the Holder has purchased all of the Warrant Shares available hereunder and the Warrant has been exercised in full, in which case, the Holder shall surrender this Warrant to the Company for cancellation within three (3) Trading Days of the date on which the final Exercise Notice is delivered to the Company. On or before the first (1st) Trading Day following the date on which the Holder has delivered the applicable Exercise Notice, the Company shall transmit by electronic mail an acknowledgment of confirmation of receipt of the Exercise Notice, in the form attached to the Exercise Notice, to the Holder and the Transfer Agent. So long as the Holder delivers the Aggregate Exercise Price (or notice of a Cashless Exercise, if applicable) on or prior to the first (1st) Trading Day following the date on which the Exercise Notice has been delivered to the Company, then on or prior to the earlier of (i) the second (2nd) Trading Day and (ii) the number of Trading Days comprising the Standard Settlement Period, in each case following the date on which the Exercise Notice has been delivered to the Company, or, if the Holder does not deliver the Aggregate Exercise Price (or notice of a Cashless Exercise, if applicable) on or prior to the first (1st) Trading Day following the date on which the Exercise Notice has been delivered to the Company, then on or prior to the first (1st) Trading Day following the date on which the Aggregate Exercise Price (or notice of a Cashless Exercise) is delivered

(such earlier date, or if later, the earliest day on which the Company is required to deliver Warrant Shares pursuant to this Section 1(a), the “**Share Delivery Date**”), the Company shall (X) provided that the Transfer Agent is participating in the Depository Trust Company (“**DTC**”) Fast Automated Securities Transfer Program (“**FAST**”), credit such aggregate number of Warrant Shares to which the Holder is entitled pursuant to such exercise to the Holder’s or its designee’s balance account with DTC through its Deposit / Withdrawal At Custodian system, or (Y) if the Transfer Agent is not participating in FAST, issue and dispatch by overnight courier to the physical address or email address as specified in the Exercise Notice, a certificate or evidence of a credit of book-entry shares, registered in the name of the Holder or its designee, for the number of Warrant Shares to which the Holder is entitled pursuant to such exercise. The Company shall be responsible for all fees and expenses of the Transfer Agent and all fees and expenses with respect to the issuance of Warrant Shares via DTC, if any, including without limitation for same day processing. Upon delivery of the Exercise Notice, the Holder shall be deemed for all corporate purposes to have become the holder of record and beneficial owner of the Warrant Shares with respect to which this Warrant has been exercised, irrespective of the date such Warrant Shares are credited to the Holder’s DTC account or the date of delivery of the certificates evidencing such Warrant Shares, as the case may be. If this Warrant is physically delivered to the Company in connection with any exercise pursuant to this Section 1(a) and the number of Warrant Shares represented by this Warrant submitted for exercise is greater than the number of Warrant Shares being acquired upon an exercise, then the Company shall as soon as practicable and in no event later than three (3) Trading Days after any exercise and at its own expense, issue and deliver to the Holder (or its designee) a new Warrant (in accordance with Section 7(d)) representing the right to purchase the number of Warrant Shares issuable immediately prior to such exercise under this Warrant, less the number of Warrant Shares with respect to which this Warrant is exercised. No fractional Warrant Shares are to be issued upon the exercise of this Warrant, but rather the number of Warrant Shares to be issued shall be rounded down to the nearest whole number. The Company shall pay any and all transfer, stamp, issuance and similar taxes, costs and expenses (including, without limitation, fees and expenses of the Transfer Agent) which may be payable with respect to the issuance and delivery of Warrant Shares upon exercise of this Warrant; provided, that the Company shall not be required to pay any tax or governmental charge that may be imposed with respect to any applicable withholding or the issuance or delivery of the Warrant Shares to any Person other than the Holder, and no such issuance or delivery shall be made unless and until the Person requesting such issuance has paid to the Company the amount of any such tax, or has established to the satisfaction of the Company that such tax has been paid. The Company’s obligations to issue and deliver Warrant Shares in accordance with the terms and subject to the conditions hereof are absolute and unconditional, irrespective of any action or inaction by the Holder to enforce the same, any waiver or consent with respect to any provision hereof, the recovery of any judgment against any Person or any action to enforce the same, or any setoff, counterclaim, recoupment, limitation or termination; provided, however, that the Company shall not be required to deliver Warrant Shares with respect to an exercise prior to the Holder’s delivery of the Aggregate Exercise Price (or notice of a Cashless Exercise) with respect to such exercise.

(b) Exercise Price. For purposes of this Warrant, “**Exercise Price**” means \$[•] per share, subject to adjustment as provided herein.

(c) Company’s Failure to Timely Deliver Securities. If either (I) the Company shall fail for any reason or for no reason to issue to the Holder on or prior to the applicable Share Delivery Date, if (x) the Transfer Agent is not participating in FAST, a certificate or evidence of a book-entry credit for the number of shares of Common Stock to which the Holder is entitled and register such Common Stock on the Company’s share register or (y) the Transfer Agent is participating in FAST, to credit the Holder’s balance account with DTC, for such number of shares of Common Stock to which the Holder is entitled upon the Holder’s exercise of this Warrant or (II) a registration statement (which may be the Registration Statement) covering the issuance of the Warrant Shares that are the subject of the Exercise Notice (the “**Exercise Notice Warrant Shares**”) is not available for the issuance of such Exercise Notice Warrant Shares and (x) the Company fails to promptly, but in no event later than one (1) Business Day after such registration statement becomes unavailable, to so notify the Holder and (y) the Company is unable to deliver the Exercise Notice Warrant Shares electronically without any restrictive legend by crediting such aggregate number of Exercise Notice Warrant Shares to the Holder’s or its designee’s balance account with DTC through its Deposit / Withdrawal At Custodian system (the event described in the immediately foregoing clause (II) is hereinafter referred to as a “**Notice Failure**” and together with the event described in clause (I) above, an “**Exercise Failure**”), then, in addition to all other remedies available to the Holder, if on or prior to the applicable Share Delivery Date either (I) if the Transfer Agent is not participating in FAST, the Company shall fail to issue and deliver a certificate or evidence of a book-entry credit to the Holder and register such shares of Common Stock on the Company’s share register or, if the Transfer Agent is participating in FAST, credit the Holder’s balance account with DTC for the number of shares

of Common Stock to which the Holder is entitled upon the Holder's exercise hereunder or pursuant to the Company's obligation pursuant to clause (ii) below or (II) if a Notice Failure occurs, and if on or after such date the Holder is required by its broker to purchase (in an open market transaction or otherwise) or the Holder's brokerage firm otherwise purchases, shares of Common Stock to deliver in satisfaction of a sale by the Holder of the Warrant Shares which the Holder anticipated receiving upon such exercise (a "**Buy-In**"), then the Company shall, within three (3) Trading Days after the Holder's request, (A) pay in cash to the Holder the amount, if any, by which (x) the Holder's total purchase price (including brokerage commissions and other out-of-pocket expenses, if any) for the shares of Common Stock so purchased exceeds (y) the amount obtained by multiplying (1) the number of Warrant Shares that the Company was required to deliver to the Holder in connection with the exercise at issue times (2) the price at which the sell order giving rise to such purchase obligation was executed, and (B) at the option of the Holder, either reinstate the portion of the Warrant and equivalent number of Warrant Shares for which such exercise was not honored (in which case such exercise shall be deemed rescinded) or deliver to the Holder the number of shares of Common Stock that would have been issued had the Company timely complied with its exercise and delivery obligations hereunder. For example, if the Holder purchases Common Stock having a total purchase price of \$11,000 to cover a Buy-In with respect to an attempted exercise of shares of Common Stock with an aggregate sale price giving rise to such purchase obligation of \$10,000, under clause (A) of the immediately preceding sentence the Company shall be required to pay the Holder \$1,000. The Holder shall provide the Company written notice indicating the amounts payable to the Holder in respect of the Buy-In and, upon request of the Company, evidence of the amount of such loss. Nothing herein shall limit a Holder's right to pursue any other remedies available to it hereunder, at law or in equity including, without limitation, a decree of specific performance and/or injunctive relief with respect to the Company's failure to timely deliver shares of Common Stock upon exercise of the Warrant as required pursuant to the terms hereof. The Company's current transfer agent participates in FAST. In the event that the Company changes transfer agents while this Warrant is outstanding, the Company shall use commercially reasonable efforts to select a transfer agent that participates in FAST. While this Warrant is outstanding, the Company shall cause its transfer agent to participate in FAST with respect to this Warrant. In addition to the foregoing rights, (i) if the Company fails to deliver the applicable number of Warrant Shares upon an exercise pursuant to Section 1 by the applicable Share Delivery Date, then the Holder shall have the right to rescind such exercise in whole or in part and retain and/or have the Company return, as the case may be, any portion of this Warrant that has not been exercised pursuant to such Exercise Notice; provided that the rescission of an exercise shall not affect the Company's obligation to make any payments that have accrued prior to the date of such notice pursuant to this Section 1(c) or otherwise, and (ii) if a registration statement (which may be the Registration Statement) covering the issuance of the Warrant Shares that are subject to an Exercise Notice is not available for the issuance of such Exercise Notice Warrant Shares and the Holder has submitted an Exercise Notice prior to receiving notice of the non-availability of such registration statement and the Company has not already delivered the Warrant Shares underlying such Exercise Notice electronically without any restrictive legend by crediting such aggregate number of Warrant Shares to which the Holder is entitled pursuant to such exercise to the Holder's or its designee's balance account with DTC through its Deposit / Withdrawal At Custodian system, the Holder shall have the option, by delivery of notice to the Company, to (x) rescind such Exercise Notice in whole or in part and retain or have returned, as the case may be, any portion of this Warrant that has not been exercised pursuant to such Exercise Notice; provided that the rescission of an Exercise Notice shall not affect the Company's obligation to make any payments that have accrued prior to the date of such notice pursuant to this Section 1(c) or otherwise, and/or (y) switch some or all of such Exercise Notice from a cash exercise to a Cashless Exercise. In addition to the foregoing, if the Company fails for any reason to deliver to the Holder the Warrant Shares subject to an Exercise Notice by the second Trading Day following the Share Delivery Date, the Company shall pay to the Holder, in cash, as liquidated damages and not as a penalty, for each \$1,000 of Warrant Shares subject to such exercise (based on the Weighted Average Price of the Common Stock on the date of the applicable Exercise Notice), \$10 per Trading Day (increasing to \$20 per Trading Day on the third Trading Day after such liquidated damages begin to accrue) for each Trading Day after the second Trading Day following such Share Delivery Date until such Warrant Shares are delivered or Holder rescinds such exercise.

(d) Cashless Exercise. Notwithstanding anything contained herein to the contrary, if a registration statement (which may be the Registration Statement) covering the issuance of the Exercise Notice Warrant Shares is not available for the issuance of such Exercise Notice Warrant Shares, the Holder may, in its sole discretion, exercise this Warrant in whole or in part and, in lieu of making the cash payment otherwise contemplated to be made to the Company upon such exercise in payment of the Aggregate Exercise Price, elect instead to receive upon such exercise the "Net Number" of shares of Common Stock determined according to the following formula (a "**Cashless Exercise**"):

$$\text{Net Number} = \frac{(A \times B) - (A \times C)}{B}$$

For purposes of the foregoing formula:

A = the total number of shares with respect to which this Warrant is then being exercised.

B = as applicable: (i) the Weighted Average Price of the Common Stock on the Trading Day immediately preceding the date of the applicable Exercise Notice if such Exercise Notice is (1) both executed and delivered pursuant to Section 1(a) hereof on a day that is not a Trading Day or (2) both executed and delivered pursuant to Section 1(a) hereof on a Trading Day prior to the opening of “regular trading hours” (as defined in Rule 600(b)(68) of Regulation NMS promulgated under the federal securities laws) on such Trading Day, (ii) at the option of the Holder, either (y) the Weighted Average Price on the Trading Day immediately preceding the date of the applicable Exercise Notice or (z) the Bid Price of the Common Stock as of the time of the Holder’s execution of the applicable Exercise Notice if such Exercise Notice is executed during “regular trading hours” on a Trading Day and is delivered within two (2) hours thereafter (including until two (2) hours after the close of “regular trading hours” on a Trading Day) pursuant to Section 1(a) hereof or (iii) the Weighted Average Price of the Common Stock on the date of the applicable Exercise Notice if the date of such Exercise Notice is a Trading Day and such Exercise Notice is both executed and delivered pursuant to Section 1(a) hereof after the close of “regular trading hours” on such Trading Day.

C = the Exercise Price then in effect for the applicable Warrant Shares at the time of such exercise.

If Warrant Shares are issued in such a cashless exercise, the Company acknowledges and agrees that in accordance with Section 3(a)(9) of the Securities Act, the Warrant Shares shall take on the registered characteristics of the Warrants being exercised, and the holding period of the Warrants being exercised may be tacked on to the holding period of the Warrant Shares. The Company agrees not to take any position contrary to this Section 1(d). Without limiting the rights of a Holder to receive Warrant Shares on a “cashless exercise,” and to receive the cash payments contemplated pursuant to Sections 1(c) and 4(b), in no event will the Company be required to net cash settle a Warrant exercise.

(e) Disputes. In the case of a dispute as to the determination of the Exercise Price or the arithmetic calculation of the Warrant Shares, the Company shall promptly issue to the Holder the number of Warrant Shares that are not disputed and resolve such dispute in accordance with Section 11.

(f) Beneficial Ownership. Notwithstanding anything to the contrary contained herein, the Company shall not affect the exercise of any portion of this Warrant, and the Holder shall not have the right to exercise any portion of this Warrant, pursuant to the terms and conditions of this Warrant and any such exercise shall be null and void and treated as if never made, to the extent that after giving effect to such exercise, the Holder together with the other Attribution Parties collectively would beneficially own in the aggregate in excess of 4.99% (or, upon election by a Holder prior to the issuance of any Warrants, 9.99%) (the “**Maximum Percentage**”) of the number of shares of Common Stock outstanding immediately after giving effect to such exercise. For purposes of the foregoing sentence, the aggregate number of shares of Common Stock beneficially owned by the Holder and the other Attribution Parties shall include the number of shares of Common Stock held by the Holder and all other Attribution Parties plus the number of shares of Common Stock issuable upon exercise of this Warrant with respect to which the determination of such sentence is being made, but shall exclude the number of shares of Common Stock which would be issuable upon (A) exercise of the remaining, unexercised portion of this Warrant beneficially owned by the Holder or any of the other Attribution Parties and (B) exercise or conversion of the unexercised or unconverted portion of any other securities of the Company (including, without limitation, any convertible notes or convertible preferred stock or warrants, including the other Warrants) beneficially owned by the Holder or any other Attribution Party subject to a limitation on conversion or exercise analogous to the limitation contained in this Section 1(f). For purposes of this Section 1(f), beneficial ownership shall be calculated in accordance with Section 13(d) of the Securities Exchange Act of 1934, as amended (the “**1934 Act**”). For purposes of this Warrant, in determining the number of outstanding shares of Common Stock the Holder may acquire upon the exercise of this Warrant without exceeding the Maximum Percentage, the Holder may rely on the number of outstanding shares of Common Stock as reflected in (x) the

Company's most recent Annual Report on Form 10-K, Quarterly Report on Form 10-Q and Current Reports on Form 8-K or other public filing with the Securities and Exchange Commission (the "SEC"), as the case may be, (y) a more recent public announcement by the Company or (z) any other written notice by the Company or the Transfer Agent setting forth the number of shares of Common Stock outstanding (the "**Reported Outstanding Share Number**"). If the Company receives an Exercise Notice from the Holder at a time when the actual number of outstanding shares of Common Stock is less than the Reported Outstanding Share Number, the Company shall (i) notify the Holder in writing of the number of shares of Common Stock then outstanding and, to the extent that such Exercise Notice would otherwise cause the Holder's beneficial ownership, as determined pursuant to this Section 1(f), to exceed the Maximum Percentage, the Holder must notify the Company of a reduced number of Warrant Shares to be purchased pursuant to such Exercise Notice (the number of shares by which such purchase is reduced, the "**Reduction Shares**") and (ii) as soon as reasonably practicable, the Company shall return to the Holder any exercise price paid by the Holder for the Reduction Shares. For any reason at any time, upon the written or oral request of the Holder, the Company shall within one (1) Business Day confirm orally and in writing or by electronic mail to the Holder the number of shares of Common Stock then outstanding. In any case, the number of outstanding shares of Common Stock shall be determined after giving effect to the conversion or exercise of securities of the Company, including this Warrant, by the Holder and any other Attribution Party since the date as of which the Reported Outstanding Share Number was reported. In the event that the issuance of Common Stock to the Holder upon exercise of this Warrant results in the Holder and the other Attribution Parties being deemed to beneficially own, in the aggregate, more than the Maximum Percentage of the number of outstanding shares of Common Stock (as determined under Section 13(d) of the 1934 Act), the number of shares so issued by which the Holder's and the other Attribution Parties' aggregate beneficial ownership exceeds the Maximum Percentage (the "**Excess Shares**") shall be deemed null and void and shall be cancelled *ab initio*, and the Holder shall not have the power to vote or to transfer the Excess Shares. As soon as reasonably practicable after the issuance of the Excess Shares has been deemed null and void, the Company shall return to the Holder the exercise price paid by the Holder for the Excess Shares. Upon delivery of a written notice to the Company, the Holder may from time to time increase or decrease the Maximum Percentage to any other percentage not in excess of 9.99% as specified in such notice; provided that (i) any such increase in the Maximum Percentage will not be effective until the sixty-first (61st) day after such notice is delivered to the Company and (ii) any such increase or decrease will apply only to the Holder and the other Attribution Parties and not to any other holder of Warrants that is not an Attribution Party of the Holder. For purposes of clarity, the shares of Common Stock issuable pursuant to the terms of this Warrant in excess of the Maximum Percentage shall not be deemed to be beneficially owned by the Holder for any purpose including for purposes of Section 13(d) or Rule 16a-1(a)(1) of the 1934 Act. No prior inability to exercise this Warrant pursuant to this paragraph shall have any effect on the applicability of the provisions of this paragraph with respect to any subsequent determination of exercisability. The provisions of this paragraph shall be construed and implemented in a manner otherwise than in strict conformity with the terms of this Section 1(f) to the extent necessary to correct this paragraph or any portion of this paragraph which may be defective or inconsistent with the intended beneficial ownership limitation contained in this Section 1(f) or to make changes or supplements necessary or desirable to properly give effect to such limitation. The limitation contained in this paragraph may not be waived and shall apply to a successor holder of this Warrant. The Holder hereby acknowledges and agrees that the Company shall be entitled to rely on the representations and the other information set forth in any Exercise Notice and shall not be required to independently verify whether any exercise of this Warrant would cause the Holder (together with the other Attribution Parties) to collectively beneficially own in excess of the Maximum Percentage of the number of shares of Common Stock outstanding after giving effect to such exercise or otherwise trigger the provisions of this Section 1(f).

(g) **Required Reserve Amount.** So long as this Warrant remains outstanding, the Company shall at all times keep reserved for issuance under this Warrant a number of shares of Common Stock at least equal to 100% of the maximum number of shares of Common Stock as shall be necessary to satisfy the Company's obligation to issue shares of Common Stock under the Warrants then outstanding (without regard to any limitations on exercise) (the "**Required Reserve Amount**"); provided that at no time shall the number of shares of Common Stock reserved pursuant to this Section 1(g) be reduced other than in connection with any exercise of Warrants or such other event covered by Section 2(c) below. The Required Reserve Amount (including, without limitation, each increase in the number of shares so reserved) shall be allocated pro rata among the holders of the Warrants based on the number of shares of Common Stock issuable upon exercise of Warrants held by each holder thereof on the Issuance Date (without regard to any limitations on exercise) (the "**Authorized Share Allocation**"). In the event that a holder shall sell or otherwise transfer any of such holder's Warrants, each transferee shall be allocated a pro rata portion of such holder's Authorized Share Allocation. Any shares of Common Stock reserved and allocated to any Person which ceases to hold any Warrants shall be allocated to the remaining holders of Warrants, pro rata based on the number of shares of Common Stock issuable upon exercise of the Warrants then held by such holders thereof (without regard to any limitations on exercise).

(h) Insufficient Authorized Shares. If at any time while this Warrant remains outstanding the Company does not have a sufficient number of authorized and unreserved shares of Common Stock to satisfy its obligation to reserve for issuance the Required Reserve Amount (an “**Authorized Share Failure**”), then the Company shall promptly take all action reasonably necessary to increase the Company’s authorized shares of Common Stock to an amount sufficient to allow the Company to reserve the Required Reserve Amount for this Warrant then outstanding. Without limiting the generality of the foregoing sentence, as soon as practicable after the date of the occurrence of an Authorized Share Failure, but in no event later than ninety (90) days after the occurrence of such Authorized Share Failure, the Company shall hold a meeting of its stockholders for the approval of an increase in the number of authorized shares of Common Stock. In connection with such meeting, the Company shall provide each stockholder with a proxy statement and shall use its reasonable best efforts to solicit its stockholders’ approval of such increase in authorized shares of Common Stock and to cause its board of directors to recommend to the stockholders that they approve such proposal. Notwithstanding the foregoing, if at any such time of an Authorized Share Failure, the Company is able to obtain the written consent of a majority of the shares of its issued and outstanding shares of Common Stock to approve the increase in the number of authorized shares of Common Stock, the Company may satisfy this obligation by obtaining such consent and submitting for filing with the SEC an Information Statement on Schedule 14C.

2. ADJUSTMENT OF EXERCISE PRICE AND NUMBER OF WARRANT SHARES. The Exercise Price and the number of Warrant Shares shall be adjusted from time to time as follows:

(a) Intentionally omitted.

(b) Voluntary Adjustment By Company. Unless prohibited by the rules of the Principal Market, the Company may at any time during the term of this Warrant reduce the then current Exercise Price to any amount and for any period of time deemed appropriate by the Board of Directors of the Company.

(c) Adjustment Upon Subdivision or Combination of Common Stock. If the Company at any time on or after the Subscription Date subdivides (by any stock split, stock dividend, recapitalization or otherwise) one or more classes of its outstanding shares of Common Stock into a greater number of shares, the Exercise Price in effect immediately prior to such subdivision will be proportionately reduced and the number of Warrant Shares will be proportionately increased. If the Company at any time on or after the Subscription Date combines (by combination, reverse stock split or otherwise) one or more classes of its outstanding shares of Common Stock into a smaller number of shares, the Exercise Price in effect immediately prior to such combination will be proportionately increased and the number of Warrant Shares will be proportionately decreased. Any adjustment under this Section 2(c) shall become effective at the close of business on the date the subdivision or combination becomes effective.

3. RIGHTS UPON DISTRIBUTION OF ASSETS. In addition to any adjustments pursuant to Section 2 above, if, on or after the Subscription Date and on or prior to the Expiration Date, the Company shall declare or make any dividend or other distribution of its assets (or rights to acquire its assets) to holders of shares of Common Stock, by way of return of capital or otherwise (including, without limitation, any distribution of cash, stock or other securities, property, options, evidence of indebtedness or any other assets by way of a dividend, spin off, reclassification, corporate rearrangement, scheme of arrangement or other similar transaction) (a “**Distribution**”), at any time after the issuance of this Warrant, then, in each such case, the Holder shall be entitled to participate in such Distribution to the same extent that the Holder would have participated therein if the Holder had held the number of shares of Common Stock acquirable upon complete exercise of this Warrant (without regard to any limitations or restrictions on exercise of this Warrant, including without limitation, the Maximum Percentage) immediately before the date on which a record is taken for such Distribution, or, if no such record is taken, the date as of which the record holders of shares of Common Stock are to be determined for the participation in such Distribution (provided, however, that to the extent that the Holder’s right to participate in any such Distribution would result in the Holder and the other Attribution Parties exceeding the Maximum Percentage, then the Holder shall not be entitled to participate in such Distribution to such extent (and shall not be entitled to beneficial ownership of such shares of Common Stock as a result of such Distribution (and beneficial ownership) to such extent) and the portion of such Distribution shall be held

in abeyance for the benefit of the Holder until such time or times as its right thereto would not result in the Holder and the other Attribution Parties exceeding the Maximum Percentage, at which time or times the Holder shall be granted such Distribution (and any Distributions declared or made on such initial Distribution or on any subsequent Distribution held similarly in abeyance) to the same extent as if there had been no such limitation).

4. PURCHASE RIGHTS; FUNDAMENTAL TRANSACTIONS.

(a) Purchase Rights. In addition to any adjustments pursuant to Section 2 above, if at any time on or after the Subscription Date and on or prior to the Expiration Date the Company grants, issues or sells any Options, Convertible Securities or rights to purchase stock, warrants, securities or other property pro rata to the record holders of any class of Common Stock (the "**Purchase Rights**"), then the Holder will be entitled to acquire, upon the terms applicable to such Purchase Rights, the aggregate Purchase Rights which the Holder could have acquired if the Holder had held the number of shares of Common Stock acquirable upon complete exercise of this Warrant (without regard to any limitations or restrictions on exercise of this Warrant, including without limitation, the Maximum Percentage) immediately before the date on which a record is taken for the grant, issuance or sale of such Purchase Rights, or, if no such record is taken, the date as of which the record holders of Common Stock are to be determined for the grant, issuance or sale of such Purchase Rights (provided, however, that to the extent that the Holder's right to participate in any such Purchase Right would result in the Holder and the other Attribution Parties exceeding the Maximum Percentage, then the Holder shall not be entitled to participate in such Purchase Right to such extent (and shall not be entitled to beneficial ownership of such Common Stock as a result of such Purchase Right (and beneficial ownership) to such extent) and such Purchase Right to such extent shall be held in abeyance for the benefit of the Holder until such time or times as its right thereto would not result in the Holder and the other Attribution Parties exceeding the Maximum Percentage, at which time or times the Holder shall be granted such right (and any Purchase Right granted, issued or sold on such initial Purchase Right or on any subsequent Purchase Right to be held similarly in abeyance) to the same extent as if there had been no such limitation).

(b) Fundamental Transaction. The Company shall not enter into or be party to a Fundamental Transaction unless the Successor Entity assumes in writing all of the obligations of the Company under this Warrant in accordance with the provisions of this Section 4(b), including agreements to deliver to the Holder in exchange for this Warrant a security of the Successor Entity evidenced by a written instrument substantially similar in form and substance to this Warrant, including, without limitation, which is exercisable for a corresponding number of shares of capital stock equivalent to the shares of Common Stock acquirable and receivable upon exercise of this Warrant (without regard to any limitations on the exercise of this Warrant) prior to such Fundamental Transaction, and with an exercise price which applies the exercise price hereunder to such shares of capital stock (but taking into account the relative value of the shares of Common Stock pursuant to such Fundamental Transaction and the value of such shares of capital stock, such adjustments to the number of shares of capital stock and such exercise price being for the purpose of protecting the economic value of this Warrant immediately prior to the consummation of such Fundamental Transaction). Upon the consummation of each Fundamental Transaction, the Successor Entity shall succeed to, and be substituted for the Company (so that from and after the date of the applicable Fundamental Transaction, the provisions of this Warrant and the other Transaction Documents referring to the "Company" shall refer instead to the Successor Entity), and may exercise every right and power of the Company and shall assume all of the obligations of the Company under this Warrant with the same effect as if such Successor Entity had been named as the Company herein. Upon consummation of each Fundamental Transaction, the Successor Entity shall deliver to the Holder confirmation that there shall be issued upon exercise of this Warrant at any time after the consummation of the applicable Fundamental Transaction, in lieu of the shares of Common Stock (or other securities, cash, assets or other property (except such items still issuable under Sections 3 and 4(a) above, which shall continue to be receivable thereafter)) issuable upon the exercise of this Warrant prior to the applicable Fundamental Transaction, such shares of common stock (or its equivalent) of the Successor Entity (including its Parent Entity) which the Holder would have been entitled to receive upon the happening of the applicable Fundamental Transaction had this Warrant been exercised immediately prior to the applicable Fundamental Transaction (without regard to any limitations on the exercise of this Warrant), as adjusted in accordance with the provisions of this Warrant. Notwithstanding the foregoing, and without limiting Section 1(f) hereof, the Holder may elect, at its sole option, by delivery of written notice to the Company to waive this Section 4(b) to permit the Fundamental Transaction without the assumption of this Warrant. In addition to and not in substitution for any other rights hereunder, prior to the consummation of each

Fundamental Transaction pursuant to which holders of shares of Common Stock are entitled to receive securities or other assets with respect to or in exchange for shares of Common Stock (a “**Corporate Event**”), the Company shall make appropriate provision to insure that the Holder will thereafter have the right to receive upon an exercise of this Warrant at any time after the consummation of the applicable Fundamental Transaction but prior to the Expiration Date, in lieu of the shares of the Common Stock (or other securities, cash, assets or other property (except such items still issuable under Sections 3 and 4(a) above, which shall continue to be receivable thereafter)) issuable upon the exercise of the Warrant prior to such Fundamental Transaction, such shares of stock, securities, cash, assets or any other property whatsoever (including warrants or other purchase or subscription rights) (collectively, the “**Corporate Event Consideration**”) which the Holder would have been entitled to receive upon the happening of the applicable Fundamental Transaction had this Warrant been exercised immediately prior to the applicable Fundamental Transaction (without regard to any limitations on the exercise of this Warrant). The provision made pursuant to the preceding sentence shall be in a form and substance reasonably satisfactory to the Requisite Holders. The provisions of this Section 4(b) shall apply similarly and equally to successive Fundamental Transactions and Corporate Events. Notwithstanding anything to the contrary, in the event of a Fundamental Transaction, the Company or any Successor Entity shall, at the Holder’s option, exercisable at any time concurrently with, or within 30 days after, the consummation of the Fundamental Transaction (or, if later, the date of the public announcement of the applicable Fundamental Transaction), purchase this Warrant from the Holder by paying to the Holder an amount of cash equal to the Black Scholes Value (as defined below) of the remaining unexercised portion of this Warrant on the date of the consummation of such Fundamental Transaction; provided, however, that, if the Fundamental Transaction is not within the Company’s control, including not approved by the Company’s Board of Directors, Holder shall only be entitled to receive from the Company or any Successor Entity the same type or form of consideration (and in the same proportion), at the Black Scholes Value of the unexercised portion of this Warrant, that is being offered and paid to the holders of Common Stock of the Company in connection with the Fundamental Transaction, whether that consideration be in the form of cash, stock or any combination thereof, or whether the holders of Common Stock are given the choice to receive from among alternative forms of consideration in connection with the Fundamental Transaction; provided, further, that if holders of Common Stock of the Company are not offered or paid any consideration in such Fundamental Transaction, such holders of Common Stock will be deemed to have received common stock of the Successor Entity (which entity may be the Company following such Fundamental Transaction) in such Fundamental Transaction. “**Black Scholes Value**” means the value of this Warrant based on the Black-Scholes Option Pricing Model obtained from the “OV” function on Bloomberg, L.P. (“**Bloomberg**”) determined as of the day of consummation of the applicable contemplated Fundamental Transaction for pricing purposes and reflecting (A) a risk-free interest rate corresponding to the U.S. Treasury rate for a period equal to the time between the date of the public announcement of the applicable Fundamental Transaction and the Expiration Date, (B) an expected volatility equal to the greater of 100% and the 100 day volatility obtained from the HVT function on Bloomberg (determined utilizing a 365 day annualization factor) as of the Trading Day immediately following the public announcement of the applicable contemplated Fundamental Transaction, (C) the underlying price per share used in such calculation shall be the greater of (i) the sum of the price per share being offered in cash, if any, plus the value of any non-cash consideration, if any, being offered in such Fundamental Transaction and (ii) the highest VWAP during the period beginning on the Trading Day immediately preceding the public announcement of the applicable contemplated Fundamental Transaction (or the consummation of the applicable Fundamental Transaction, if earlier) and ending on the Trading Day of the Holder’s request pursuant to this Section 4(b) and (D) a remaining option time equal to the time between the date of the public announcement of the applicable contemplated Fundamental Transaction and the Expiration Date and (E) a zero cost of borrow. The payment of the Black Scholes Value will be made by wire transfer of immediately available funds (or such other consideration) within five Business Days of the Holder’s election (or, if later, on the date of consummation of the Fundamental Transaction). The Company shall cause any Successor Entity to assume in writing all of the obligations of the Company under this Warrant in accordance with the provisions of this Section 4(b) pursuant to written agreements in form and substance reasonably satisfactory to the Holder and approved by the Holder (without unreasonable delay) prior to such Fundamental Transaction and shall, at the option of the Holder, deliver to the Holder in exchange for this Warrant a security of the Successor Entity evidenced by a written instrument substantially similar in form and substance to this Warrant which is exercisable for a corresponding number of shares of capital stock of such Successor Entity (or its parent entity) equivalent to the shares of Common Stock acquirable and receivable upon exercise of this Warrant (without regard to any limitations on the exercise of this Warrant) prior to such Fundamental Transaction, and with an exercise price which applies the exercise price hereunder to such shares of capital stock (but taking into account the relative value of the shares of Common Stock pursuant to such Fundamental Transaction and the value of such shares of capital stock, such number of shares of capital stock and such exercise price being for the purpose of protecting the economic value of this Warrant immediately prior to the consummation of such Fundamental Transaction), and which is reasonably satisfactory in form and substance to the Holder. Upon the occurrence of any such Fundamental Transaction, the Successor Entity shall be added to the term “Company” under this Warrant (so that from and after the occurrence or consummation of such Fundamental Transaction, each and every provision of this Warrant and the other Transaction Documents referring to the “Company” shall refer instead to each of the Company and the Successor Entity or Successor Entities, jointly and severally), and the Successor Entity or Successor Entities, jointly and severally with the Company, may exercise every right and power of the Company prior thereto and the Successor Entity or Successor Entities shall assume all of the obligations of the Company prior thereto under this Warrant and the other Transaction Documents with the same effect as if the Company and such Successor Entity or Successor Entities, jointly and severally, had been named as the Company herein. For the avoidance of doubt, the Holder shall be entitled to the benefits of the provisions of this Section 4(b) regardless of (i) whether the Company has sufficient authorized shares of Common Stock for the issuance of Warrant Shares and/or (ii) whether a Fundamental Transaction occurs prior to the Initial Exercise Date.

5. **NONCIRCUMVENTION.** The Company hereby covenants and agrees that the Company will not, by amendment of its Certificate of Incorporation or Bylaws, or through any reorganization, transfer of assets, consolidation, merger, scheme of arrangement, dissolution, issuance or sale of securities, or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms of this Warrant, and will at all times in good faith carry out all of the provisions of this Warrant and take all action as may be required to protect the rights of the Holder. Without limiting the generality of the foregoing, the Company (i) shall not increase the par value of any shares of Common Stock receivable upon the exercise of this Warrant above the Exercise Price then in effect, (ii) shall take all such actions as may be necessary or appropriate in order that the Company may validly and legally issue fully paid and nonassessable shares of Common Stock upon the exercise of this Warrant, and (iii) shall, so long as any of the Warrants are outstanding, take all action necessary to reserve and keep available out of its authorized and unissued shares of Common Stock, solely for the purpose of effecting the exercise of the Warrants, the number of shares of Common Stock as shall from time to time be necessary to effect the exercise of the Warrants then outstanding (without regard to any limitations on exercise).

6. **WARRANT HOLDER NOT DEEMED A STOCKHOLDER.** Except as otherwise specifically provided herein, the Holder, solely in such Person’s capacity as a holder of this Warrant, shall not be entitled to vote or receive dividends or be deemed the holder of capital stock of the Company for any purpose, nor shall anything contained in this Warrant be construed to confer upon the Holder, solely in such Person’s capacity as the Holder of this Warrant, any of the rights of a stockholder of the Company or any right to vote, give or withhold consent to any corporate action (whether any reorganization, issue of stock, reclassification of stock, consolidation, merger, conveyance or otherwise), receive notice of meetings, receive dividends or subscription rights, or otherwise, prior to the issuance to the Holder of the Warrant Shares which such Person is then entitled to receive upon the due exercise of this Warrant. In addition, nothing contained in this Warrant shall be construed as imposing any liabilities on the Holder to purchase any securities (upon exercise of this Warrant or otherwise) or as a stockholder of the Company, whether such liabilities are asserted by the Company or by creditors of the Company. Notwithstanding this Section 6, the Company shall provide the Holder with copies of the same notices and other information given to the stockholders of the Company generally, contemporaneously with the giving thereof to the stockholders.

7. REISSUANCE OF WARRANTS.

(a) Transfer of Warrant. If this Warrant is to be transferred, the Holder shall surrender this Warrant to the Company, whereupon the Company will forthwith issue and deliver upon the order of the Holder a new Warrant (in accordance with Section 7(d)), registered as the Holder may request, representing the right to purchase the number of Warrant Shares being transferred by the Holder and, if less than the total number of Warrant Shares then underlying this Warrant is being transferred, a new Warrant (in accordance with Section 7(d)) to the Holder representing the right to purchase the number of Warrant Shares not being transferred. The Company shall not be obligated to pay any tax which may be payable with respect to any transfer (or deemed transfer) arising in connection with the registration of any certificates for Warrant Shares or Warrants in the name of any Person other than the Holder.

(b) Lost, Stolen or Mutilated Warrant. Upon receipt by the Company of evidence reasonably satisfactory to the Company of the loss, theft, destruction or mutilation of this Warrant, and, in the case of loss, theft or destruction, of any indemnification undertaking by the Holder to the Company in customary form (but without the obligation to post a bond) and, in the case of mutilation, upon surrender and cancellation of this Warrant, the Company shall execute and deliver to the Holder a new Warrant (in accordance with Section 7(d)) representing the right to purchase the Warrant Shares then underlying this Warrant.

(c) Exchangeable for Multiple Warrants. This Warrant is exchangeable, upon the surrender hereof by the Holder at the principal office of the Company, for a new Warrant or Warrants (in accordance with Section 7(d)) representing in the aggregate the right to purchase the number of Warrant Shares then underlying this Warrant, and each such new Warrant will represent the right to purchase such portion of such Warrant Shares as is designated by the Holder at the time of such surrender.

(d) Issuance of New Warrants. Whenever the Company is required to issue a new Warrant pursuant to the terms of this Warrant, such new Warrant (i) shall be of like tenor with this Warrant, (ii) shall represent, as indicated on the face of such new Warrant, the right to purchase the Warrant Shares then underlying this Warrant (or in the case of a new Warrant being issued pursuant to Section 7(a) or Section 7(c), the Warrant Shares designated by the Holder which, when added to the number of shares of Common Stock underlying the other new Warrants issued in connection with such issuance, does not exceed the number of Warrant Shares then underlying this Warrant), (iii) shall have an issuance date, as indicated on the face of such new Warrant which is the same as the Issuance Date, and (iv) shall have the same rights and conditions as this Warrant.

8. NOTICES. Whenever notice is required to be given under this Warrant, including, without limitation, an Exercise Notice, unless otherwise provided herein, such notice shall be given in writing, (i) if delivered (a) from within the domestic United States, by first-class registered or certified airmail, or nationally recognized overnight express courier, postage prepaid, electronic mail or (b) from outside the United States, by International Federal Express, electronic mail, and (ii) will be deemed given (A) if delivered by first-class registered or certified mail domestic, three (3) Business Days after so mailed, (B) if delivered by nationally recognized overnight carrier, one (1) Business Day after so mailed, (C) if delivered by International Federal Express, two (2) Business Days after so mailed and (D) at the time of transmission, if delivered by electronic mail to each of the email addresses specified in this Section 8 prior to 5:00 p.m. (New York time) on a Trading Day, and (E) the next Trading Day after the date of transmission, if delivered by electronic mail to each of the email addresses specified in this Section 8 on a day that is not a Trading Day or later than 5:00 p.m. (New York time) on any Trading Day, and will be delivered and addressed as follows:

(i) if to the Company, to:

Synlogic, Inc.
301 Binney St., Suite 402
Cambridge, M.A. 02142
Attention: [•]
Email: [•]

(ii) if to the Holder, at such address or other contact information delivered by the Holder to the Company or as is on the books and records of the Company.

The Company shall provide the Holder with prompt written notice of all actions taken pursuant to this Warrant, including in reasonable detail a description of such action and the reason therefor. Without limiting the generality of the foregoing, the Company will give written notice to the Holder (i) promptly upon any adjustment of the Exercise Price, setting forth in reasonable detail, and certifying, the calculation of such adjustment and (ii) at least fifteen (15) days prior to the date on which the Company closes its books or takes a record (A) with respect to any dividend or distribution upon the shares of Common Stock, (B) with respect to any grants, issuances or sales of any Options, Convertible Securities or rights to purchase stock, warrants, securities or other property to holders of shares of Common Stock or (C) for determining rights to vote with respect to any Fundamental Transaction, dissolution or liquidation; provided in each case that such information shall be made known to the public prior to or in conjunction with such notice being provided to the Holder. It is expressly understood and agreed that the time of exercise specified by the Holder in each Exercise Notice shall be definitive and may not be disputed or challenged by the Company.

9. AMENDMENT AND WAIVER. Except as otherwise provided herein, the provisions of this Warrant may be amended or waived and the Company may take any action herein prohibited, or omit to perform any act herein required to be performed by it, only if the Company has obtained the written consent of the Holder.

10. GOVERNING LAW; JURISDICTION; JURY TRIAL. This Warrant shall be governed by and construed and enforced in accordance with, and all questions concerning the construction, validity, interpretation and performance of this Warrant shall be governed by, the, internal laws of the State of New York, without giving effect to any choice of law or conflict of law provision or rule (whether of the State of New York or any other jurisdictions) that would cause the application of the laws of any jurisdictions other than the State of New York. The Company hereby irrevocably submits to the exclusive jurisdiction of the courts of the State of New York and of the United States of America sitting in The City and County of New York for the adjudication of any dispute hereunder or in connection herewith or with any transaction contemplated hereby or discussed herein, 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. The Company hereby irrevocably waives personal service of process and consents to process being served in any such suit, action or proceeding by mailing a copy thereof to the Company at the address set forth in Section 8(i) above or such other address as the Company subsequently delivers to the Holder and agrees that such service shall constitute good and sufficient service of process and notice thereof. Nothing contained herein shall be deemed to limit in any way any right to serve process in any manner permitted by law. Nothing contained herein shall be deemed or operate to preclude the Holder from bringing suit or taking other legal action against the Company in any other jurisdiction to collect on the Company's obligations to the Holder, to realize on any collateral or any other security for such obligations, or to enforce a judgment or other court ruling in favor of the Holder. If either party shall commence an action, suit or proceeding to enforce any provisions of this Warrant, the prevailing party in such action, suit or proceeding shall be reimbursed by the other party for their reasonable attorneys' fees and other costs and expenses incurred with the investigation, preparation and prosecution of such action or proceeding. **THE COMPANY HEREBY IRREVOCABLY WAIVES ANY RIGHT IT MAY HAVE, AND AGREES NOT TO REQUEST, A JURY TRIAL FOR THE ADJUDICATION OF ANY DISPUTE HEREUNDER OR IN CONNECTION WITH OR ARISING OUT OF THIS WARRANT OR ANY TRANSACTION CONTEMPLATED HEREBY.**

11. DISPUTE RESOLUTION. In the case of a dispute as to the determination of the Exercise Price or the arithmetic calculation of the Warrant Shares, the Company shall submit the disputed determinations or arithmetic calculations via electronic mail within two (2) Business Days of receipt of the Exercise Notice or other event giving rise to such dispute, as the case may be, to the Holder. If the Holder and the Company are unable to agree upon such determination or calculation of the Exercise Price or the Warrant Shares within three (3) Business Days of such disputed determination or arithmetic calculation being submitted to the Holder, then the Company shall, within two (2) Business Days submit via electronic mail (a) the disputed determination of the Exercise Price to an independent, reputable investment bank selected by the Company and approved by the Holder or (b) the disputed arithmetic calculation of the Warrant Shares to the Company's independent, outside accountant. The Company shall cause at its expense the investment bank or the accountant, as the case may be, to perform the determinations or calculations and notify the Company and the Holder of the results no later than ten (10) Business Days from the time it receives the disputed determinations or calculations. Such investment bank's or accountant's determination or calculation, as the case may be, shall be binding upon all parties absent demonstrable error.

12. REMEDIES, OTHER OBLIGATIONS, BREACHES AND INJUNCTIVE RELIEF. The remedies provided in this Warrant shall be cumulative and in addition to all other remedies available under this Warrant and any other Transaction Documents, at law or in equity (including a decree of specific performance and/or other injunctive relief), and nothing herein shall limit the right of the Holder to pursue actual damages for any failure by the Company to comply with the terms of this Warrant. The Company acknowledges that a breach by it of its obligations hereunder will cause irreparable harm to the Holder and that the remedy at law for any such breach may be inadequate. The Company therefore agrees that, in the event of any such breach or threatened breach, the Holder of this Warrant shall be entitled, in addition to all other available remedies, to an injunction restraining any breach, without the necessity of showing economic loss and without any bond or other security being required.

13. TRANSFER. This Warrant and the Warrant Shares may be offered for sale, sold, transferred, pledged or assigned without the consent of the Company.

14. **SEVERABILITY; CONSTRUCTION; HEADINGS.** If any provision of this Warrant is prohibited by law or otherwise determined to be invalid or unenforceable by a court of competent jurisdiction, the provision that would otherwise be prohibited, invalid or unenforceable shall be deemed amended to apply to the broadest extent that it would be valid and enforceable, and the invalidity or unenforceability of such provision shall not affect the validity of the remaining provisions of this Warrant so long as this Warrant as so modified continues to express, without material change, the original intentions of the parties as to the subject matter hereof and the prohibited nature, invalidity or unenforceability of the provision(s) in question does not substantially impair the respective expectations or reciprocal obligations of the parties or the practical realization of the benefits that would otherwise be conferred upon the parties. The parties will endeavor in good faith negotiations to replace the prohibited, invalid or unenforceable provision(s) with a valid provision(s), the effect of which comes as close as possible to that of the prohibited, invalid or unenforceable provision(s). This Warrant shall be deemed to be jointly drafted by the Company and the Holder and shall not be construed against any Person as the drafter hereof. The headings of this Warrant are for convenience of reference and shall not form part of, or affect the interpretation of, this Warrant.

15. **DISCLOSURE.** Upon receipt or delivery by the Company of any notice in accordance with the terms of this Warrant, unless the Company has in good faith determined that the matters relating to such notice do not constitute material, non-public information relating to the Company or its subsidiaries, the Company shall on or prior to 9:00 a.m., New York City time on the Business Day immediately following such receipt, or contemporaneously upon any such delivery, publicly disclose such material, non-public information on a Current Report on Form 8-K or otherwise. In the event that the Company believes that a notice contains material, non-public information relating to the Company or its subsidiaries, the Company shall indicate to such Holder promptly following receipt of such notice, or contemporaneously with delivery, and in the absence of any such indication, the Holder shall be allowed to presume that all matters relating to such notice do not constitute material, non-public information relating to the Company or its subsidiaries.

16. **CERTAIN DEFINITIONS.** For purposes of this Warrant, the following terms shall have the following meanings:

(a) **“Affiliate”** means, with respect to any Person, any other Person that directly or indirectly controls, is controlled by, or is under common control with, such Person, it being understood for purposes of this definition that “control” of a Person means the power directly or indirectly either to vote 10% or more of the stock having ordinary voting power for the election of directors of such Person or direct or cause the direction of the management and policies of such Person whether by contract or otherwise.

(b) **“Attribution Parties”** means, collectively, the following Persons and entities: (i) any investment vehicle, including, any funds, feeder funds or managed accounts, currently, or from time to time after the Subscription Date, directly or indirectly managed or advised by the Holder’s investment manager or any of its Affiliates or principals, (ii) any direct or indirect Affiliates of the Holder or any of the foregoing, (iii) any Person acting or who could be deemed to be acting as a Group together with the Holder or any of the foregoing and (iv) any other Persons whose beneficial ownership of the Company’s Common Stock would or could be aggregated with the Holder’s and the other Attribution Parties for purposes of Section 13(d) of the 1934 Act. For clarity, the purpose of the foregoing is to subject collectively the Holder and all other Attribution Parties to the Maximum Percentage.

(c) **“Bid Price”** means, for any security as of the particular time of determination, the bid price for such security on the Principal Market as reported by Bloomberg as of such time of determination, or, if the Principal Market is not the principal securities exchange or trading market for such security, the bid price of such security on the principal securities exchange or trading market where such security is listed or traded as reported by Bloomberg as of such time of determination, or if the foregoing does not apply, the bid price of such security in the over-the-counter market on the electronic bulletin board for such security as reported by Bloomberg as of such time of determination, or, if no bid price is reported for such security by Bloomberg as of such time of determination, the average of the bid prices of any market makers for such security as reported in the OTC Link or “pink sheets” by OTC Markets Group Inc. as of such time of determination. If the Bid Price cannot be calculated for a security as of the particular time of determination on any of the foregoing bases, the Bid Price of such security as of such time of determination shall be the fair market value as mutually determined by the Company and the Holder. If the Company and the Holder are unable to agree upon the fair market value of such security, then such dispute shall be resolved in accordance with the procedures in Section 11. All such determinations shall be appropriately adjusted for any stock dividend, stock split, stock combination or other similar transaction during such period.

(d)

“**Bloomberg**” means Bloomberg Financial Markets.

(e) “**Business Day**” means any day other than Saturday, Sunday or other day on which commercial banks in The City of New York are authorized or required by law to remain closed.

(f) “**Change of Control**” means any Fundamental Transaction other than (i) any reorganization, recapitalization or reclassification of the Common Stock in which holders of the Company’s voting power immediately prior to such reorganization, recapitalization or reclassification continue after such reorganization, recapitalization or reclassification to hold publicly traded securities and, directly or indirectly, are, in all material respects, the holders of the voting power of the surviving entity (or entities with the authority or voting power to elect the members of the board of directors (or their equivalent if other than a corporation) of such entity or entities) after such reorganization, recapitalization or reclassification, (ii) pursuant to a migratory merger effected solely for the purpose of changing the jurisdiction of incorporation of the Company or (iii) a merger in connection with a bona fide acquisition by the Company of any Person in which (x) the gross consideration paid, directly or indirectly, by the Company in such acquisition is not greater than 20% of the Company’s market capitalization as calculated on the date of the consummation of such merger and (y) such merger does not contemplate a change to the identity of a majority of the board of directors of the Company. Notwithstanding anything herein to the contrary, any transaction or series of transactions that, directly or indirectly, results in the Company or the Successor Entity not having Common Stock or common stock, as applicable, registered under the Exchange Act and listed on an Eligible Market shall be deemed a Change of Control.

(g) “**Closing Bid Price**” means, for any security as of any date, the last closing bid price and last closing trade price, respectively, for such security on the Principal Market, as reported by Bloomberg, or, if the Principal Market begins to operate on an extended hours basis and does not designate the closing bid price or the closing trade price, as the case may be, then the last bid price or the last trade price, respectively, of such security prior to 4:00:00 p.m., New York time, as reported by Bloomberg, or, if the Principal Market is not the principal securities exchange or trading market for such security, the last closing bid price or last trade price, respectively, of such security on the principal securities exchange or trading market where such security is listed or traded as reported by Bloomberg, or if the foregoing do not apply, the last closing bid price or last trade price, respectively, of such security in the over-the-counter market on the electronic bulletin board for such security as reported by Bloomberg, or, if no closing bid price or last trade price, respectively, is reported for such security by Bloomberg, the average of the bid prices, or the ask prices, respectively, of any market makers for such security as reported in the OTC Link or “pink sheets” by OTC Markets Group Inc. If the Closing Bid Price cannot be calculated for a security on a particular date on any of the foregoing bases, the Closing Bid Price of such security on such date shall be the fair market value as mutually determined by the Company and the Holder. If the Company and the Holder are unable to agree upon the fair market value of such security, then such dispute shall be resolved pursuant to Section 11. All such determinations shall be appropriately adjusted for any stock dividend, stock split, stock combination, reclassification or other similar transaction during the applicable calculation period.

(h) “**Common Stock**” means (i) the Company’s Common Stock, par value \$0.001 per share, and (ii) any capital stock into which such Common Stock shall have been changed or any capital stock resulting from a reclassification of such Common Stock.

(i) “**Convertible Securities**” means any stock or securities (other than Options) directly or indirectly convertible into or exercisable or exchangeable for shares of Common Stock.

(j) “**Eligible Market**” means The Nasdaq Capital Market, the NYSE American LLC, The Nasdaq Global Select Market, The Nasdaq Global Market or The New York Stock Exchange, Inc.

(k) **“Expiration Date”** means the date sixty (60) months after the Initial Exercisability Date or, if such date falls on a day other than a Business Day or on which trading does not take place on the Principal Market (a **“Holiday”**), the next day that is not a Holiday.

(l) **“Fundamental Transaction”** means (A) that the Company shall, directly or indirectly, including through subsidiaries, Affiliates or otherwise, in one or more related transactions, (i) consolidate or merge with or into (whether or not the Company is the surviving corporation) another Subject Entity, or (ii) sell, assign, transfer, convey or otherwise dispose of all or substantially all of the properties or assets of the Company or any of its “significant subsidiaries” (as defined in Rule 1-02 of Regulation S-X) to one or more Subject Entities, or (iii) make, or allow one or more Subject Entities to make, or allow the Company to be subject to or have its shares of Common Stock be subject to or party to one or more Subject Entities making, a purchase, tender or exchange offer that is accepted by the holders of at least either (x) 50% of the outstanding shares of Common Stock, (y) 50% of the outstanding shares of Common Stock calculated as if any shares of Common Stock held by all Subject Entities making or party to, or Affiliated with any Subject Entities making or party to, such purchase, tender or exchange offer were not outstanding; or (z) such number of shares of Common Stock such that all Subject Entities making or party to, or Affiliated with any Subject Entity making or party to, such purchase, tender or exchange offer, become collectively the beneficial owners (as defined in Rule 13d-3 under the 1934 Act) of at least 50% of the outstanding shares of Common Stock, or (iv) consummate a stock purchase agreement or other business combination (including, without limitation, a reorganization, recapitalization, spin-off or scheme of arrangement) with one or more Subject Entities whereby all such Subject Entities, individually or in the aggregate, acquire, either (x) at least 50% of the outstanding shares of Common Stock, (y) at least 50% of the outstanding shares of Common Stock calculated as if any shares of Common Stock held by all the Subject Entities making or party to, or Affiliated with any Subject Entity making or party to, such stock purchase agreement or other business combination were not outstanding; or (z) such number of shares of Common Stock such that the Subject Entities become collectively the beneficial owners (as defined in Rule 13d-3 under the 1934 Act) of at least 50% of the outstanding shares of Common Stock, or (v) reorganize, recapitalize or reclassify its shares of Common Stock, (B) that the Company shall, directly or indirectly, including through subsidiaries, Affiliates or otherwise, in one or more related transactions, allow any Subject Entity individually or the Subject Entities in the aggregate to be or become the “beneficial owner” (as defined in Rule 13d-3 under the 1934 Act), directly or indirectly, whether through acquisition, purchase, assignment, conveyance, tender, tender offer, exchange, reduction in outstanding shares of Common Stock, merger, consolidation, business combination, reorganization, recapitalization, spin-off, scheme of arrangement, reorganization, recapitalization or reclassification or otherwise in any manner whatsoever, of either (x) at least 50% of the aggregate ordinary voting power represented by issued and outstanding shares of Common Stock, (y) at least 50% of the aggregate ordinary voting power represented by issued and outstanding shares of Common Stock not held by all such Subject Entities as of the Subscription Date calculated as if any shares of Common Stock held by all such Subject Entities were not outstanding, or (z) a percentage of the aggregate ordinary voting power represented by issued and outstanding shares of Common Stock or other equity securities of the Company sufficient to allow such Subject Entities to effect a statutory short form merger or other transaction requiring other stockholders of the Company to surrender their Common Stock without approval of the stockholders of the Company or (C) directly or indirectly, including through subsidiaries, Affiliates or otherwise, in one or more related transactions, the issuance of or the entering into any other instrument or transaction structured in a manner to circumvent, or that circumvents, the intent of this definition in which case this definition shall be construed and implemented in a manner otherwise than in strict conformity with the terms of this definition to the extent necessary to correct this definition or any portion of this definition which may be defective or inconsistent with the intended treatment of such instrument or transaction.

(m) **“Group”** means a “group” as that term is used in Section 13(d) of the 1934 Act and as defined in Rule 13d-5 thereunder.

(n) **“Options”** means any rights, warrants or options to subscribe for or purchase shares of Common Stock or Convertible Securities.

(o) **“Parent Entity”** of a Person means an entity that, directly or indirectly, controls the applicable Person, including such entity whose common stock or equivalent equity security is quoted or listed on an Eligible Market (or, if so elected by the Holder, any other market, exchange or quotation system), or, if there is more than one such Person or such entity, the Person or such entity designated by the Holder or in the absence of such designation, such Person or entity with the largest public market capitalization as of the date of consummation of the Fundamental Transaction.

(p) **“Person”** means an individual, a limited liability company, a partnership, a joint venture, a corporation, a trust, an unincorporated organization, any other entity and a government or any department or agency thereof.

(q) **“Principal Market”** means The Nasdaq Capital Market.

(r) **“Requisite Holders”** means the holders of the Warrants representing a majority of the shares of Common Stock underlying the Warrants then outstanding.

(s) **“Standard Settlement Period”** means the standard settlement period, expressed in a number of Trading Days, for the Company’s primary trading market or quotation system with respect to the Common Stock that is in effect on the date of receipt of an applicable Exercise Notice.

(t) **“Subject Entity”** means any Person, Persons or Group or any Affiliate or associate of any such Person, Persons or Group.

(u) **“Successor Entity”** means one or more Person or Persons (or, if so elected by the Holder, the Company or Parent Entity) formed by, resulting from or surviving any Fundamental Transaction or one or more Person or Persons (or, if so elected by the Holder, the Company or the Parent Entity) with which such Fundamental Transaction shall have been entered into.

(v) **“Trading Day”** means any day on which the Common Stock is traded on the Principal Market, or, if the Principal Market is not the principal trading market for the Common Stock, then on the principal securities exchange or securities market on which the Common Stock is then traded.

(w) **“Trading Market”** means any of the following markets or exchanges on which the Common Stock is listed or quoted for trading on the date in question: the NYSE American, the Nasdaq Capital Market, the Nasdaq Global Market, the Nasdaq Global Select Market, the New York Stock Exchange (or any successors to any of the foregoing).

(x) **“Transaction Documents”** means any agreement entered into by and between the Company and the Holder, as applicable.

(y) **“Transfer Agent”** means American Stock Transfer & Trust Company, LLC, the current transfer agent of the Company, with a mailing address of 6201 15th Ave, Brooklyn, NY 11219 and any successor transfer agent of the Company.

(z) **“VWAP”** means for any date, the price determined by the first of the following clauses that applies: (a) if the Common Stock is then listed or quoted on a Trading Market, the daily volume weighted average price of the Common Stock for such date (or the nearest preceding date) on the Trading Market on which the Common Stock is then listed or quoted as reported by Bloomberg L.P. (based on a Trading Day from 9:30 a.m. (New York City time) to 4:02 p.m. (New York City time)), (b) if OTCQB or OTCQX is not a Trading Market, the volume weighted average price of the Common Stock for such date (or the nearest preceding date) on OTCQB or OTCQX as applicable, (c) if the Common Stock is not then listed or quoted for trading on OTCQB or OTCQX and if prices for the Common Stock are then reported on the Pink Open Market (or a similar organization or agency succeeding to its functions of reporting prices), the most recent bid price per share of the Common Stock so reported, or (d) in all other cases, the fair market value of a share of Common Stock as determined by an independent appraiser selected in good faith by the holders of a majority in interest of the Warrants then outstanding and reasonably acceptable to the Company, the fees and expenses of which shall be paid by the Company.

(aa) **“Weighted Average Price”** means, for any security as of any date, the dollar volume-weighted average price for such security on the Principal Market during the period beginning at 9:30:01 a.m., New York time (or such other time as the Principal Market publicly announces is the official open of trading), and ending at 4:00:00 p.m., New York time (or such other time as the Principal Market publicly announces is the official close of trading), as reported by Bloomberg through its “Volume at Price” function or, if the foregoing does not apply, the dollar volume-weighted average price of such security in the over-the-counter market on the electronic bulletin board for such security during the period beginning at 9:30:01 a.m., New York time (or such other time as such market publicly announces is the official open of trading), and ending at 4:00:00 p.m., New York time (or such other time as such market publicly announces is the official close of trading), as reported by Bloomberg, or, if no dollar volume-weighted average price is reported for such security by Bloomberg for such hours, the average of the highest Closing Bid Price and the lowest closing ask price of any of the market makers for such security as reported in the OTC Link or “pink sheets” by OTC Markets Group Inc. If the Weighted Average Price cannot be calculated for a security on a particular date on any of the foregoing bases, the Weighted Average Price of such security on such date shall be the fair market value as mutually determined by the Company and the Holder. If the Company and the Holder are unable to agree upon the fair market value of such security, then such dispute shall be resolved pursuant to Section 11 with the term “Weighted Average Price” being substituted for the term “Exercise Price.” All such determinations shall be appropriately adjusted for any stock dividend, stock split, stock combination, reclassification or other similar transaction during the applicable calculation period.

[Signature Page Follows]

IN WITNESS WHEREOF, the Company has caused this Warrant to Purchase Common Stock to be duly executed as of the Issuance Date set out above.

Synlogic, Inc.

By: _____
Name: [•]
Title: [•]

[Signature Page to the Warrant to Purchase Common Stock]

Annex A

EXERCISE NOTICE

TO BE EXECUTED BY THE REGISTERED HOLDER TO EXERCISE THIS

WARRANT TO PURCHASE COMMON STOCK

SYNOLOGIC, INC.

The undersigned holder hereby exercises the right to purchase _____ shares of Common Stock (“**Warrant Shares**”) of Synlogic, Inc., a Delaware corporation (the “**Company**”), evidenced by the attached Warrant to Purchase Common Stock (the “**Warrant**”). Capitalized terms used herein and not otherwise defined shall have the respective meanings set forth in the Warrant.

1. Form of Exercise Price. The holder intends that payment of the Exercise Price shall be made as:

_____ a “Cash Exercise” with respect to _____ Warrant Shares; and/or
_____ a “Cashless Exercise” with respect to _____ Warrant Shares.

2. Payment of Exercise Price. In the event that the holder has elected a Cash Exercise with respect to some or all of the Warrant Shares to be issued pursuant hereto, the holder shall pay the Aggregate Exercise Price in the sum of \$ _____ to the Company in accordance with the terms of the Warrant.

3. Delivery of Warrant Shares. The Company shall deliver to the holder _____ Warrant Shares in accordance with the terms of the Warrant.

4. Maximum Percentage Representation. Notwithstanding anything to the contrary contained herein, this Exercise Notice shall constitute a representation by the Holder of the Warrant submitting this Exercise Notice that, after giving effect to the exercise provided for in this Exercise Notice, such Holder (together with the other Attribution Parties) will not have beneficial ownership of a number of shares of Common Stock in excess of the Maximum Percentage of the total outstanding shares of Common Stock of the Company as determined pursuant to the provisions of Section 1(f) of the Warrant.

Date: _____

Name of Registered Holder

By: _____

Name:

Title:

ACKNOWLEDGMENT

The Company hereby acknowledges this Exercise Notice and hereby directs American Stock Transfer & Trust Company, LLC to issue the above indicated number of shares of Common Stock on or prior to the applicable Share Delivery Date.

Synlogic, Inc.

By: _____

Name:

Title:

Consent of Independent Registered Public Accounting Firm

We consent to the use of our report dated March 29, 2023, with respect to the consolidated financial statements of Synlogic, Inc., incorporated herein by reference and to the reference to our firm under the heading “Experts” in the prospectus.

/s/ KPMG LLP

Boston, Massachusetts
September 26, 2023

Calculation of Filing Fee Tables

Form S-1
(Form Type)

Synlogic, Inc.

(Exact Name of Registrant as Specified in its Charter)

Table 1: Newly Registered Securities

Security Type	Security Class Title	Fee Calculation Rule	Amount Registered	Proposed Maximum Offering Price Per Unit	Maximum Aggregate Offering Price(1)(2)	Fee Rate	Amount of Registration Fee
Equity	Common Stock, par value \$0.001 per share	Rule 457(o)			\$20,000,000	\$110.20 per \$1,000,000	\$2,204.00
Equity	Warrants to purchase Common Stock	Other				\$110.20 per \$1,000,000	
Equity	Pre-funded warrants to purchase Common Stock(3)(4)	Other				\$110.20 per \$1,000,000	
Equity	Common Stock, par value \$0.001 per share, underlying warrants(5)	Other			\$20,000,000	\$110.20 per \$1,000,000	\$2,204.00
Equity	Common Stock, par value \$0.001 per share, underlying pre-funded warrants	Other				\$110.20 per \$1,000,000	
Total Offering Amounts					\$40,000,000		\$4,408.00
Total Fees Previously Paid							\$1,900.95
Total Fee Offsets							—
Net Fee Due							\$2,507.05

(1) Estimated solely for the purpose of computing the amount of the registration fee pursuant to Rule 457(o) under the Securities Act of 1933, as amended.

(2) Each unit to be sold in this offering will consist of one share of Common Stock (or one pre-funded warrant to purchase one share of Common Stock in lieu thereof) and one warrant to purchase one share of Common Stock. In accordance with Rule 457(i) under the Securities Act, no separate registration fee is required with respect to the warrants or pre-funded warrants registered hereby.

(3) The proposed maximum aggregate offering price of the Common Stock proposed to be sold in the offering will be reduced on a dollar-for-dollar basis based on the offering price of any pre-funded warrants offered and sold in the offering, and as such the proposed maximum offering price of the common stock and pre-funded warrants (including the common stock issuable upon exercise of the pre-funded warrants) if any, is \$20,000,000.

(4) The registrant may issue pre-funded warrants to purchase common stock in the offering. The purchase price of each pre-funded warrant will equal the price per share at which shares of common stock are being sold to the public in this offering, minus \$0.001, which constitutes the pre-funded portion of the exercise price, and the remaining unpaid exercise price of the pre-funded warrant will equal \$0.001 per share (subject to adjustment as provided for therein).

(5) Based on an assumed per share exercise price for the warrants to purchase Common Stock of 100% of the public offering price per unit in this offering.