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

FORM 10-Q

(Mark One)

☒ **QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the quarterly period ended September 30, 2017

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from _____ to _____

Commission File No. 001-37566

SYNLOGIC, INC.
(Exact name of registrant as specified in its charter)

Delaware	**26-1824804**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
200 Sidney St., Suite 320 Cambridge, MA 02139	**(617) 401-9947**
(Address of principal executive offices)	**(Registrant's telephone number)**

Indicate by check mark whether the registrant: (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ☒ No ☐

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

Large accelerated filer	☐	Accelerated filer	☐
Non-accelerated filer	☒ (Do not check if a smaller reporting company)	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 13(a) of the Exchange Act. ☒

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

As of November 6, 2017, there were 16,285,271 shares of the registrant's common stock, par value $0.001 per share, outstanding.

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SYNLOGIC, INC. AND SUBSIDIARIES

QUARTERLY REPORT ON FORM 10-Q

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PART I—FINANCIAL INFORMATION

Item 1. Financial Statements

SYNLOGIC, INC. AND SUBSIDIARIES

Unaudited Consolidated Balance Sheets

(In thousands, except share/unit amounts)

	September 30, 2017	December 31, 2016
Assets		
Current assets:		
Cash and cash equivalents	$ 79,175	$ 14,586
Short-term marketable securities	17,397	—
Prepaid expenses and other current assets	1,656	1,477
Total current assets	98,228	16,063
Property and equipment, net of accumulated depreciation of $2,132 and $810 as of September 30, 2017 and December 31, 2016, respectively	4,911	3,504
Restricted cash	1,097	50
Other assets	234	422
Total assets	$ 104,470	$ 20,039
Liabilities, Contingently Redeemable Preferred Shares/Units and Equity		
Current liabilities:		
Accounts payable	$ 956	$ 988
Accrued expenses	5,519	2,296
Deferred revenue	444	444
Deferred rent	778	255
Capital lease obligations	264	203
Total current liabilities	7,961	4,186
Long-term liabilities:		
Deferred revenue, net of current portion	779	1,112
Deferred rent, net of current portion	—	1,061
Capital lease obligations, net of current portion	165	177
Total long-term liabilities	944	2,350
Commitments and contingencies		
Contingently Redeemable Class A Preferred Units		
Issued and outstanding 0 and 781,693 units as of September 30, 2017 and December 31, 2016, respectively	—	5,000

See accompanying notes to the unaudited consolidated financial statements.

SYNLOGIC, INC. AND SUBSIDIARIES

Unaudited Consolidated Balance Sheets (continued)

(In thousands, except share/unit amounts)

	September 30, 2017	December 31, 2016
Equity		
Preferred Shares, $0.001 par value		
5,000,000 shares authorized, none issued and outstanding as of September 30, 2017 and none authorized, issued and outstanding as of December 31, 2016	—	—
Class B Preferred Units		
Issued and outstanding 0 and 1,029,852 units as of September 30, 2017 and December 31, 2016, respectively	—	13,611
Class A Preferred Units		
Issued and outstanding 0 and 3,922,028 units as of September 30, 2017 and December 31, 2016, respectively	—	25,548
Common shares, $0.001 par value		
250,000,000 and 0 shares authorized as of September 30, 2017 and December 31, 2016. 16,284,885 shares issued and outstanding as of September 30, 2017 and 0 shares issued and outstanding as of December 31, 2016	16	—
Common units		
Issued and outstanding 0 and 1,847,616 units as of September 30, 2017 and December 31, 2016, respectively	—	592
Additional paid-in capital	155,508	—
Accumulated other comprehensive income	(2)	—
Accumulated deficit	(59,957)	(31,248)
Total equity	95,565	8,503
Total liabilities and equity	$ 104,470	$ 20,039

See accompanying notes to the unaudited consolidated financial statements.

SYNLOGIC, INC. AND SUBSIDIARIES

Unaudited Consolidated Statements of Operations

(In thousands, except share/unit and per share/unit amounts)

	For the three months ended		For the nine months ended	
	September 30, 2017	September 30, 2016	September 30, 2017	September 30, 2016
Revenue	$ 111	$ 111	$ 2,333	$ 333
Operating expenses:				
Research and development	8,955	4,133	22,605	9,883
General and administrative	3,231	1,286	8,634	4,555
Total operating expenses	12,186	5,419	31,239	14,438
Loss from operations	(12,075)	(5,308)	(28,906)	(14,105)
Other income (expense):				
Interest and investment income	170	3	267	3
Interest expense	(7)	(1)	(22)	(4)
Other expense	(12)	—	(19)	—
Other income (expense), net	151	2	226	(1)
Net loss	$ (11,924)	$ (5,306)	$ (28,680)	$ (14,106)
Net loss per share attributable to common shareholders - basic and diluted	$ (1.66)	$ —	$ (7.87)	$ —
Weighted-average common shares used in computing net loss per share attributable to common shareholders - basic and diluted	7,169,241	—	3,642,125	—
Net loss per unit attributable to common unit holders - basic and diluted	$ —	$ (3.33)	$ —	$ (9.17)
Weighted-average common units used in computing net loss per unit attributable to common unit holders - basic and diluted	—	1,594,265	—	1,538,896

See accompanying notes to the unaudited consolidated financial statements.

SYNLOGIC, INC. AND SUBSIDIARIES

Unaudited Consolidated Statements of Comprehensive Loss

(In thousands)

	For the three months ended		For the nine months ended	
	September 30, 2017	September 30, 2016	September 30, 2017	September 30, 2016
Net Loss	$ (11,924)	$ (5,306)	$ (28,680)	$ (14,106)
Other comprehensive loss:				
Net unrealized losses on marketable securities	(2)	—	(2)	—
Other comprehensive loss	(2)	—	(2)	—
Comprehensive loss	$ (11,926)	$ (5,306)	$ (28,682)	$ (14,106)

See accompanying notes to the unaudited consolidated financial statements.

SYNLOGIC, INC. AND SUBSIDIARIES

Unaudited Consolidated Statements of Cash Flows

(In thousands)

	Nine Months Ended September 30, 2017	Nine Months Ended September 30, 2016
Cash flows from operating activities:		
Net loss	$ (28,680)	$ (14,106)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation	1,324	489
Loss on disposal of assets	5	4
Equity-based compensation expense	1,478	226
Common shares issued for license acquisition	1,750	—
Accretion/amortization of investment securities	5	—
Changes in operating assets and liabilities:		
Prepaid expenses and other current assets	(179)	(695)
Accounts payable and accrued expenses	2,946	571
Deferred revenue	(333)	(333)
Deferred rent	(538)	77
Other assets	188	(67)
Net cash used in operating activities	(22,034)	(13,834)
Cash flows from investing activities:		
Net assets acquired in reverse merger, net of transaction costs	40,690	—
Purchases of marketable securities	(22,855)	—
Proceeds from maturity of marketable securities	5,450	—
Changes in restricted cash	(1,047)	—
Proceeds from sale of property and equipment	11	8
Purchases of property and equipment	(2,531)	(1,746)
Net cash used in investing activities	19,718	(1,738)
Cash flows from financing activities:		
Payments on capital lease obligations	(176)	(49)
Proceeds from sale of preferred shares, net of issuance costs	40,433	—
Proceeds from sale of preferred units, net of issuance costs	26,648	30,938
Net cash provided by financing activities	66,905	30,889
Net increase in cash	64,589	15,317
Cash at beginning of period	14,586	6,179
Cash at end of period	$ 79,175	$ 21,496
Supplemental disclosure of non-cash investing activities:		
Landlord funded allowance for tenant improvements	$ —	$ 1,295
Transaction costs from reverse merger in accounts payable and accrued expenses	$ 255	$ —
Adjustment for property and equipment purchases included in accounts payable and accrued expenses	$ (9)	$ (14)
Supplemental disclosure of non-cash financing activities:		
Cash paid for interest	$ 22	$ 4
Purchase under capital lease	$ 225	$ —
Issuance costs from sale of preferred shares in accounts payable and accrued expenses	$ —	$ 100

See accompanying notes to the unaudited consolidated financial statements.

SYNLOGIC, INC. AND SUBSIDIARIES

Notes to Unaudited Consolidated Financial Statements

(1) Nature of Business

Organization

Synlogic, Inc., together with its wholly owned and consolidated subsidiaries ("Synlogic" or the "Company") is a clinical-stage biopharmaceutical company focused on advancing its drug discovery and development platform for Synthetic Biotic™ medicines, which are designed using synthetic biology to genetically reprogram beneficial microbes to treat metabolic and inflammatory diseases and cancer. Synthetic Biotic medicines are generated from Synlogic' s proprietary drug discovery and development platform. Synlogic applies the principles and tools of synthetic biology to engineer beneficial, probiotic bacteria to perform or deliver critical therapeutic functions, compensating for missing or damaged pathways in patients with these serious diseases. As living medicines, Synthetic Biotic medicines are designed to sense a local disease context within a patient's body and respond by metabolizing toxic substances or delivering combinations of therapeutic factors.

Synlogic, Inc. ("Private Synlogic" when referred to prior to the Merger (as defined below)) was founded and began operations on March 14, 2014, as TMC Therapeutic, Inc., located in Cambridge, Massachusetts. On July 15, 2014, TMC Therapeutics, Inc. changed its name to Synlogic, Inc. On July 2, 2015, the common and preferred shareholders of Private Synlogic executed the Synlogic, LLC Contribution Agreement (the "Contribution Agreement"), pursuant to which such common and preferred shareholders contributed such shareholders' equity interests in Private Synlogic in exchange for common and preferred units in a newly formed parent company named Synlogic, LLC. In addition, Synlogic IBDCo, Inc. ("IBDCo") was formed as a subsidiary of Synlogic, LLC ("2015 Reorganization"). In conjunction with the 2015 Reorganization, Private Synlogic entered into a license, option and merger agreement with AbbVie S.à.r.l. ("AbbVie"), for the development of treatments for inflammatory bowel disease ("IBD") (Note 11).

In May 2017, Private Synlogic completed the 2017 Reorganization pursuant to which Synlogic, LLC merged with and into Private Synlogic, with Private Synlogic continuing as the surviving corporation. Pursuant to the 2017 Reorganization, the common units and preferred units of Synlogic, LLC, together consisting of Class A Preferred Units, Contingently Redeemable Class A Preferred Units and Class B Preferred Units, were exchanged for common stock and preferred stock of Private Synlogic, respectively. Additionally, Private Synlogic issued equity awards under the 2017 Plan to replace the canceled incentive units pursuant to the termination of the Synlogic, LLC 2015 Equity Incentive Plan ("2015 LLC Plan") (Note 10).

On August 28, 2017, Synlogic, Inc., formerly known as Mirna Therapeutics, Inc. (NASDAQ: MIRN) ("Mirna"), completed its business combination with Private Synlogic in accordance with the terms of 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 1:7 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) (Note 3).

The Company operates in one operating segment: the discovery and development of Synthetic Biotic medicines. The Company's chief executive officer, as chief operating decision maker, manages and allocates resources to the operations of the Company on a total company basis. Since incorporation, the Company has devoted substantially all of its efforts to the research and development of its product candidates.

Risks and Uncertainties

At September 30, 2017, the Company had approximately $96.6 million in cash, cash equivalents, and marketable securities, approximately $1.1 million of restricted cash and an accumulated deficit of approximately $60.0 million. Since its inception through September 30, 2017, the Company has primarily financed its operations through the issuance of preferred stock, the AbbVie collaboration, and the Merger. In the absence of positive cash flows from

SYNLOGIC, INC. AND SUBSIDIARIES

Notes to Unaudited Consolidated Financial Statements (continued)

operations, the Company is highly dependent on its ability to find additional sources of funding in the form of debt or equity financing. The Company secured new funding from the sale of Series C convertible preferred stock in May 2017, generating approximately $40.4 million in net proceeds. Additionally, the Company received approximately $40.4 million in net proceeds from the Merger. As a result of the Merger proceeds, the proceeds from the Series C financing in May 2017 and the Series B financing in February 2017, management believes that the Company has sufficient cash to fund its operations through at least twelve months from the issuance of these financial statements.

As an early-stage company, the Company is subject to a number of risks common to other life science companies, including, but not limited to, raising additional capital, development by its competitors of new technological innovations, risk of failure in preclinical and clinical studies, safety and efficacy of its product candidates in clinical trials, the risk of relying on external parties such as contract research organizations ("CROs") and contract manufacturing organizations ("CMOs"), the regulatory approval process, market acceptance of the Company's products once approved, lack of marketing and sales history, dependence on key personnel and protection of proprietary technology. The Company's therapeutic programs are currently pre-commercial, spanning discovery through early development and will require significant additional research and development efforts, including extensive preclinical and clinical testing and regulatory approval, prior to commercialization of any product candidates. These efforts require significant amounts of additional capital, adequate personnel, infrastructure, and extensive compliance-reporting capabilities. There can be no assurance that the Company's research and development will be successfully completed, that adequate protection for the Company's intellectual property will be obtained, that any products developed will obtain necessary regulatory approval or that any approved products will be commercially viable. Even if the Company's product development efforts are successful, it is uncertain when, if ever, the Company will generate revenue from product sales. The Company may never achieve profitability, and unless and until it does, it will continue to need to raise additional capital or obtain financing from other sources, such as strategic collaborations or partnerships.

(2) Summary of Significant Accounting Policies

(a) Basis of Presentation

The accompanying consolidated financial statements and the related disclosures as of September 30, 2017 and for the three and nine months ended September 30, 2017 and 2016 are unaudited and have been prepared in accordance with accounting principles generally accepted in the United States ("U.S.") ("U.S. GAAP" or "GAAP") and the rules and regulations of the Securities Exchange Commission ("SEC") for interim financial statements. Accordingly, they do not include all of the information and notes required by GAAP for complete financial statements. These interim consolidated financial statements should be read in conjunction with the Company's 2016 and 2015 audited consolidated financial statements and notes included in the Company's Current Report on Form 8-K/A filed with the SEC on September 26, 2017. The December 31, 2016 consolidated balance sheet included herein was derived from the audited financial statements as of that date, but does not include all disclosures including notes required by GAAP for complete financial statements. In the opinion of management, the unaudited interim consolidated financial statements reflect all adjustments, consisting of normal and recurring adjustments, necessary for the fair presentation of the Company's financial position and results of operations for the three and nine months ended September 30, 2017 and 2016. The results of operations for the interim periods are not necessarily indicative of the results to be expected for the year ending December 31, 2017 or any other interim period or future year or period.

(b) Principles of Consolidation

The accompanying consolidated financial statements include the accounts of Synlogic and its wholly owned subsidiaries. All intercompany accounts and transactions have been eliminated in consolidation.

(c) Use of Estimates

The preparation of financial statements in accordance with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenues and expenses, and related disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the

reported amounts of expenses during the reporting period. On an on-going basis, the Company's management evaluates its estimates, including those related to revenue recognition, income taxes including the valuation allowance for deferred tax assets, research and development, accrued expenses, contingencies and equity-based compensation. The Company bases its estimates on historical experience and on various other assumptions that are believed to be reasonable, the results of which form the basis for making judgments about the carrying values of assets and liabilities. Actual results could differ from those estimates. Changes in estimates are reflected in reported results in the period in which they become known.

(d) Concentration of Credit Risk

Financial instruments that potentially subject the Company to concentrations of credit risk include amounts held as cash, cash equivalents, marketable securities and restricted cash. The Company uses high quality, accredited financial institutions to maintain its balances, and accordingly, such funds are subject to minimal credit risk. The Company has not experienced any losses in such accounts and management believes that the Company is not exposed to significant credit risk due to the financial position of the depository institutions in which those deposits are held. The Company has no financial instruments with off-balance sheet risk of loss.

(e) Fair Value

The Company records money market funds at fair value. ASC Topic 820, Fair Value Measurements and Disclosures, establishes a fair value hierarchy for those instruments measured at fair value that distinguishes between assumptions based on market data (observable inputs) and the Company's own assumptions (unobservable inputs). The hierarchy consists of three levels:

- Level 1 – Utilize observable inputs such as quoted prices in active markets for identical assets or liabilities;
- Level 2 – Utilize data points that are either directly or indirectly observable, such as quoted prices, interest rates and yield curves;
- Level 3 – Utilize unobservable data points in which there is little or no market data, which require the Company to develop its own assumptions for the asset or liability

(f) Available-for-Sale Securities

The Company classifies all short-term investments with an original maturity when purchased of greater than three months as available-for-sale. Available-for-sale securities are carried at fair value, with the unrealized gains and losses reported in other comprehensive income (loss). The amortized cost of debt securities in this category is adjusted for amortization of premiums and accretion of discounts to maturity. Such amortization is included in interest and investment income. Realized gains and losses, and declines in value judged to be other than temporary on available-for-sale securities, are included in interest and investment income.

The cost of securities sold is based on the specific identification method. Interest and dividends on securities classified as available-for-sale are included in interest and investment income. To determine whether an other-than-temporary impairment exists, the Company considers whether it has the ability and intent to hold the investment until a market price recovery, and whether evidence indicating the recoverability of the cost of the investment outweighs evidence to the contrary. There were no other-than-temporary impairments for the three or nine months ended September 30, 2017.

(g) Recently Issued Accounting Pronouncements

The recently issued accounting pronouncements described in the Company's consolidated financial statements as of and for the year ended December 31, 2016, and the notes thereto included in the Company's Current Report on Form 8-K/A filed with the SEC on September 26, 2017, have had no material changes during the three and nine months ended September 30, 2017, except as described below.

SYNLOGIC, INC. AND SUBSIDIARIES

Notes to Unaudited Consolidated Financial Statements (continued)

In May 2014, the FASB issued ASU 2014-09—Revenue from Contracts with Customers (Topic 606), which supersedes all existing revenue recognition requirements, including most industry-specific guidance. This standard is based on the principle that an entity should recognize revenue when it transfers goods or services to customers in an amount that reflects the consideration that the company expects to receive. This standard also requires additional disclosure about the nature, amount, timing and uncertainty of assets recognized from costs incurred to fulfill a contract. It will be effective for annual reporting periods beginning after December 15, 2017, including interim periods within those annual periods. Early adoption is permitted any time after the original effective date, which for the Company is January 1, 2017. Entities have the option of using either a full retrospective or a modified retrospective approach for the adoption of the new standard. The Company is continuing to assess the impact that this standard will have on its financial statements and the expected method of transition. The Company's revenue during the nine months ended September 30, 2017 is from its collaboration arrangement. During the fourth quarter of 2017, the Company plans to complete its review to determine the impact that this standard could have on its consolidated financial statements and disclosures.

In March 2016, the FASB issued ASU 2016-09—Compensation—Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting ("ASU 2016-09"). The amendments in ASU 2016-09 are to simplify several aspects of the accounting for stock-based payment transactions including the income tax consequences, classification of awards as either equity or liabilities, and classification on the statement of cash flows. In addition, companies will now have to elect whether to account for forfeitures on share-based payments by (1) recognizing forfeitures of awards as they occur or (2) estimating the number of awards expected to be forfeited and adjusting the estimate when it is likely to change, as is currently required. The Company adopted ASU 2016-09 on April 1, 2017 on a modified retrospective basis, and elected to recognize forfeitures as they occur. The Company recorded an insignificant cumulative effect adjustment as a result of the adoption of this amendment. The adoption did not have a material impact on the Company's condensed consolidated financial statements and related disclosures.

In January 2017, the FASB issued ASU 2017-01, Business Combinations (Topic 805) Clarifying the Definition of a Business ("ASU 2017-01"), which clarifies the definition of a business with the objective of adding guidance to assist entities with evaluating whether transactions should be accounted for as acquisitions (or disposals) of assets or businesses. The definition of a business affects many areas of accounting including acquisitions, disposals, goodwill, and consolidation. The Company adopted ASU 2017-01 on April 1, 2017 and followed the guidance when determining the accounting treatment of its Merger with Mirna.

(3) Merger with Mirna Therapeutics

On August 28, 2017, Private Synlogic completed the Merger with Mirna as discussed in Note 1. For accounting purposes, Private Synlogic is considered to have acquired Mirna in the Merger. Private Synlogic was determined to be the accounting acquirer based upon the terms of the Merger and other factors including: (i) Private Synlogic shareholders own approximately 83% of the combined company immediately following the closing of the Merger, (ii) Private Synlogic directors hold five of the seven board seats in the combined company, and (iii) Private Synlogic management holds all key positions in the management of the combined company. The Merger was accounted for as an asset acquisition rather than a business combination because the assets acquired and liabilities assumed by the Company do not meet the definition of a business as defined by ASU 2017-01. The net assets acquired in connection with this transaction were recorded at their estimated acquisition date fair values as of August 28, 2017, the date the Merger was completed (the "Merger Closing Date").

Under the terms of the Merger Agreement, Mirna issued shares of its common stock to Private Synlogic's stockholders, at an exchange ratio of 0.5532 shares of Mirna's common stock, after taking into account the Reverse Stock Split, for each share of Private Synlogic common stock and preferred stock outstanding immediately prior to the Merger("Merger Exchange Ratio"). The Merger Exchange Ratio was determined through arms'-length negotiations between Mirna and Private Synlogic. Mirna assumed all of the stock options outstanding under the Synlogic 2017 Stock Incentive Plan ("2017 Plan"), with such stock options henceforth representing the right to purchase a number of shares of Mirna's common stock equal to 0.5532 multiplied by the number of shares of Private Synlogic common stock previously represented by such options. Mirna also assumed the 2017 Plan. The consolidated financial statements give retroactive effect to the Merger Exchange Ratio for all periods presented.

SYNLOGIC, INC. AND SUBSIDIARIES

Notes to Unaudited Consolidated Financial Statements (continued)

Immediately after the Merger, there were 16,282,496 shares of the Company's common stock outstanding. At this time, the former stockholders and optionholders of Private Synlogic owned, or held rights to acquire, approximately 82.4% of the fully-diluted common stock of the Company, which for these purposes is defined as the outstanding common stock of the Company, plus "in the money" options, assuming that all "in the money" options of the Company outstanding immediately prior to the Merger were exercised on a cashless basis immediately prior to the closing of the Merger (the "Fully-Diluted Common Stock of the Company"), with Mirna's stockholders and optionholders immediately prior to the Merger owning approximately 17.6% of the Fully-Diluted Common Stock of the Company.

On the Merger Closing Date, the Company had approximately 20.9 million shares of common stock outstanding and a market capitalization of approximately $35 million. The estimated fair value of the net assets of Mirna on August 28, 2017 was approximately $42.6 million. The fair value of the Company's common stock on the Merger Closing Date was below the fair value of Mirna's net assets. As Mirna's net assets were predominantly comprised of cash, cash equivalents and marketable securities, partially offset by current liabilities, the fair value of Mirna's net assets as of the Merger Closing Date is considered to be the best indicator of the fair value and, therefore, the estimated preliminary purchase consideration.

All of Mirna's assets and liabilities were reflected at their fair value on the Merger Closing Date. No goodwill or intangible assets were recognized. Consistent with accounting for an asset acquisition, the Company capitalized the costs associated with the Merger. Transaction costs primarily included bank fees and professional fees associated with legal counsel, auditors and printers. The following table shows the net assets acquired in the Merger (in thousands):

	August 28, 2017
Cash and cash equivalents	$ 14,882
Marketable securities	27,600
Interest receivable	126
Prepaid assets	112
Unrealized loss on marketable securities	5
Accounts payable and accrued expenses	(105)
Total net assets acquired	42,620
Less: Transaction costs	(2,187)
Total net assets acquired less transaction costs	$ 40,433

(4) Fair Value of Financial Instruments

The table below presents information about the Company's assets that are measured at fair value on a recurring basis as of September 30, 2017 and indicate the fair value hierarchy of the valuation techniques the Company utilized to determine such fair value, as described under Note 2, *Summary of Significant Accounting Policies*.

The Company's investment portfolio includes many fixed income securities that do not always trade on a daily basis. As a result, the pricing services used by the Company applied other available information as applicable through processes such as benchmark yields, benchmarking of like securities, sector groupings and matrix pricing to prepare evaluations. In addition, model processes were used to assess interest rate impact and develop prepayment scenarios. These models take into consideration relevant credit information, perceived market movements, sector news and economic events. The inputs into these models may include benchmark yields, reported trades, broker-dealer quotes, issuer spreads and other relevant data.

SYNLOGIC, INC. AND SUBSIDIARIES

Notes to Unaudited Consolidated Financial Statements (continued)

The Company has classified assets measured at fair value on a recurring basis as follows (in thousands):

		Fair Value Measurements at Reporting Date Using		
Description	September 30, 2017	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Money market funds (included in cash and cash equivalents)	$ 38,633	$ 38,633	$ —	$ —
U.S. government-sponsored securities	400	—	400	—
U.S. Treasury securities	16,997	16,997	—	—
Total	$ 56,030	$ 55,630	$ 400	$ —

Cash equivalents, prepaid expenses and other current assets, accounts payable and accrued expenses at September 30, 2017 and December 31, 2016 are carried at amounts that approximate fair value due to their short-term maturities. Capital lease obligations at September 30, 2017 and December 31, 2016 approximate fair value as they bear interest at a rate approximating a market interest rate.

(5) Available-for-Sale Investments

The following table summarizes the available-for-sale securities held at September 30, 2017 (in thousands):

September 30, 2017	Amortized cost	Gross unrealized gains	Gross unrealized losses	Fair Value
U.S. government-sponsored securities	$ 400	$ —	$ —	$ 400
U.S. Treasury securities	16,999	—	(2)	16,997
Total	$ 17,399	$ —	$ (2)	$17,397

The Company did not have any available-for-sale securities at December 31, 2016.

The contractual maturity of all securities held at September 30, 2017 was one year or less. There were five investments in an unrealized loss position at September 30, 2017, none of which had been in an unrealized loss position for more than twelve months. The aggregate fair value of the securities in an unrealized loss position was approximately $17.4 million. The Company reviews its investments for other-than-temporary impairment whenever the fair value of an investment is less than amortized cost and evidence indicates that an investment's carrying amount is not recoverable within a reasonable period of time. To determine whether an impairment is other-than-temporary, the Company considers whether it has the ability and intent to hold the investment until a market price recovery and considers whether evidence indicating the cost of the investment is recoverable outweighs evidence to the contrary. The Company did not hold any securities with an other-than-temporary impairment at September 30, 2017.

Gross realized gains and losses on the sales of investments have not been material to the Company's consolidated statement of operations.

SYNLOGIC, INC. AND SUBSIDIARIES

Notes to Unaudited Consolidated Financial Statements (continued)

(6) Prepaid Expenses and Other Current Assets

Prepaid expenses and other current assets consists of the following (in thousands):

	September 30, 2017	December 31, 2016
Prepaid insurance	$ 539	$ 71
Prepaid research and development	644	1,163
Other prepaid	279	212
Other current assets	194	31
	$ 1,656	$ 1,477

(7) Accrued Expenses

Accrued expenses consists of the following (in thousands):

	September 30, 2017	December 31, 2016
Payroll related	$ 1,282	$ 1,341
Professional fees	923	522
Research and development	2,874	273
Other	440	160
	$ 5,519	$ 2,296

(8) Common Stock

The Company's common stock has the following characteristics:

- The holders of shares of common stock are entitled to one vote for each share of common stock held at all meetings of stockholders.
- The holders of shares of common stock are entitled to receive dividends, if and when, declared by the Company's board of directors. Since inception, no cash dividends have been declared.

The Company holds repurchase options relating to 1,217,040 of these shares, at a price equal to the initial purchase price by the founder, adjusted by the Merger Exchange Ratio. The repurchase option is exercisable should the founder cease providing services to the Company prior to the end of a four-year period beginning in April 2014. As of September 30, 2017, the Company has exercised its repurchase option on 41,819 shares of common stock as services by one of the founders had ceased.

(9) Preferred Stock

Prior to the Merger, the Company had contingently redeemable preferred stock and three series of convertible preferred stock. On the Merger Closing Date, Mirna issued shares of its common stock to holders of these shares, at an exchange rate of 0.5532 shares of common stock, after taking into account the Reverse Stock Split, in exchange for each share of preferred stock outstanding immediately prior to the Merger.

SYNLOGIC, INC. AND SUBSIDIARIES

Notes to Unaudited Consolidated Financial Statements (continued)

(10) Equity-based Compensation and Equity Incentive Plans

(a) Equity Compensation

Equity compensation during the three and nine months ended September 30, 2017 and 2016 is derived from restricted stock awards and stock options issued under the 2017 Plan, the Synlogic, Inc. 2015 Stock Incentive Plan ("2015 Plan"), from incentive units issued under the 2015 LLC Plan and from a restricted common unit grant. The Company has recorded total equity-based compensation expense of approximately $0.7 million and $1.5 million for the three and nine months ended September 30, 2017, respectively, and approximately $0.1 million and $0.2 million for the three and nine months ended September 30, 2016, respectively, which is based on the number of awards ultimately expected to vest.

The Company is displaying all equity associated with the 2017 Plan in its post-Merger amounts, as impacted by the exchange ratio.

The following table summarizes equity-based compensation expense within the Company's consolidated statements of operations and comprehensive loss for the three and nine months ended September 30, 2017 and 2016 (in thousands):

	Three months ended September 30,		Nine Months ended September 30,	
	2017	2016	2017	2016
Research and development	$ 380	$ 29	$ 883	$ 83
General and administrative	301	44	595	143
	$ 681	$ 73	$ 1,478	$ 226

The following table summarizes equity-based compensation expense by type of award for the three and nine months ended September 30, 2017 and 2016 (in thousands):

	Three months ended September 30,		Nine months ended September 30,	
	2017	2016	2017	2016
Stock options	$ 508	$ —	$ 992	$ —
Restricted stock awards	173	—	298	—
Incentive units	—	$ 39	132	125
Restricted common units	—	34	56	101
	$ 681	$ 73	$ 1,478	$ 226

(b) Awards Issued Under the Synlogic, LLC 2015 Equity Incentive Plan

(i) Incentive Units

In October 2015, Private Synlogic's Board of Directors adopted the 2015 LLC Plan, which provided for the grant of equity incentive units to employees, officers, directors or consultants. The awards generally vested 25% after one year and ratably monthly thereafter over the next 36 months. Certain awards provided for accelerated vesting upon a change in control, as defined in the 2015 LLC Plan. Incentive units did not expire. Holders of incentive units had no voting rights in connection with such incentive units. Each incentive unit was intended to be a profits interest within the meaning of IRS regulations. Each incentive unit had a threshold price, which was the price above which an incentive unit would participate in distributions. In this way, an incentive unit was designed to participate in the future profits and appreciation of Private Synlogic. Holders of incentive units would have been entitled to receive profits when and if distributions were in excess of the threshold price of the award set by the Board of Directors on the date of grant.

SYNLOGIC, INC. AND SUBSIDIARIES

Notes to Unaudited Consolidated Financial Statements (continued)

Private Synlogic measured and recorded the value of incentive units granted to non-employees over the period of time that services were provided and, as such, unvested portions were subject to remeasurement at subsequent reporting periods.

No incentive units were issued during the three and nine months ended September 30, 2017 and 122,536 and 255,672 incentive units were issued during the three and nine months ended September 30, 2016, respectively. In May 2017, all incentive units were cancelled pursuant to the 2017 Reorganization and reissued as restricted common stock. As a result, there was no unrecognized compensation expense related to incentive units as of September 30, 2017.

The following table represents a summary of incentive unit activity, as adjusted for the Merger, under the 2015 LLC Plan:

	Incentive units			
	Number of units	Weighted-average strike price	Weighted-average threshold price	Weighted-average grant date fair value
Non-vested units at December 31, 2016	971,906	$ 5.22	$ 5.93	$ 1.01
Granted	—	—	—	—
Vested	(73,719)	4.01	5.53	0.87
Forfeited	(260,145)	4.19	5.57	1.05
Non-vested units cancelled upon 2017 Reorganization	(638,042)	5.78	6.15	1.05
Non-vested units at September 30, 2017	—	$ —	$ —	$ —
Vested or expected to vest at September 30, 2017	—	$ —	$ —	$ —

(ii) Restricted Common Units

No restricted common unit awards were issued during the three and nine months ended September 30, 2017 and 2016. During the three and nine months ended September 30, 2017, 0 and 68,280 units, respectively, vested and approximately $0 and $0.1 million, respectively, in equity compensation was recognized. During the three and nine months ended September 30, 2016, 40,968 units and 218,497 units vested, respectively, and approximately $34,000 and approximately $0.1 million, respectively, in equity-based compensation was recognized. In May 2017, the restricted common unit award was cancelled pursuant to the 2017 Reorganization and reissued as restricted common stock. As a result, there was no unrecognized compensation expense related to unvested restricted common units as of September 30, 2017.

(c) Awards Issued Under the Synlogic, Inc. 2017 Stock Incentive Plan and Synlogic, Inc. 2015 Stock Incentive Plan

In May 2017, Private Synlogic adopted the 2017 Plan which provided for the grant of incentive stock options, non-qualified stock options, restricted and unrestricted stock awards and other stock-based awards. Pursuant to the 2017 Reorganization, Private Synlogic issued restricted common stock awards under the 2017 Stock Incentive Plan to replace the canceled incentive units pursuant to the termination of the 2015 LLC Plan. In certain instances, Private Synlogic also issued stock options related to the cancelled incentive units. Pursuant to the Merger Agreement, each option to purchase shares of Private Synlogic common stock under the 2017

SYNLOGIC, INC. AND SUBSIDIARIES

Notes to Unaudited Consolidated Financial Statements (continued)

Plan that was outstanding and unexercised immediately prior to the Merger was converted into and became an option to purchase shares of the Company's common stock based on the Merger Exchange Ratio of 0.5532 and the Company assumed the 2017 Plan.

The 2015 Equity Incentive Award Plan ("2015 Plan") was adopted by the Company in 2015 and remained active after the Merger, and now functions as an active plan for the Company. The 2015 Plan provides for the granting of a variety of stock-based compensation awards, including stock options, stock appreciation rights, restricted stock awards, restricted stock unit awards, deferred stock awards, dividend equivalent awards, stock payment awards, performance awards and other stock-based awards.

(i) Stock Options

During the three and nine months ended September 30, 2017, 194,260 and 843,965 stock options, respectively, were granted to employees and consultants. There were no stock options granted during the three and nine months ended September 30, 2016.

The weighted average assumptions used in the Black-Scholes option-pricing model for awards issued under the 2015 Plan and the 2017 Plan during both the three and nine months ended September 30, 2017 were:

	Three months ended September 30, 2017		Nine months ended September 30, 2017	
	Employee	Nonemployee	Employee	Nonemployee
Expected term	6.2 years	0.2 - 1.6 years	6.1 years	0.2 - 1.6 years
Weighted-average, risk-free interest rate	2.1%	1.0%	2.0%	1.1%
Expected volatility	70.2%	63.9%	70.1%	65.3%
Dividend yield	—	—	—	—

The following table summarizes stock option activity, as adjusted for the Merger Exchange Ratio under the 2015 Plan and the 2017 Plan.

	Stock options outstanding			
	Number of options	Weighted average exercise price	Weighted average remaining contractual term	Aggregate Intrinsic value (in thousands)
Outstanding at December 31, 2016	—	$ —	—	$ —
Options granted upon 2017 Reorganization	295,289	13.53	5.7	1,621
Granted	548,676	15.25	6.2	2,069
Exercised	—	—	—	—
Forfeited	(2,455)	13.53	6.1	(14)
Outstanding at September 30, 2017	841,510			$ 3,676
Vested or expected to vest at September 30, 2017	841,510	14.65	6.0	$ 3,676
Exercisable at September 30, 2017	109,745	13.57	5.4	$ 598

During the three and nine months ended September 30, 2017, approximately $0.5 million and $1.0 million in equity compensation was recognized related to stock options related to employees, respectively.

SYNLOGIC, INC. AND SUBSIDIARIES

Notes to Unaudited Consolidated Financial Statements (continued)

The weighted average grant date fair value per share of options granted to employees during the three and nine months ended September 30, 2017 was approximately $11.89 and $12.58, respectively. The grant date fair value of the options awarded to employees during the three and nine months ended September 30, 2017 was approximately $2.3 million and $7.5 million, respectively. No options were exercised during the three and nine months ended September 30, 2017.

As of September 30, 2017, there was approximately $6.8 million of unrecognized share-based compensation related to employees for unvested stock option grants which is expected to be recognized over a weighted average period of 6.2 years. The total unrecognized share-based compensation cost will be adjusted for actual forfeitures as they occur. In addition, there was approximately $0.2 million of unrecognized share-based compensation, related to unvested stock option grants to non-employees which is expected to be recognized over a weighted average period of 0.6 years. The amount of equity-based compensation expense related to non-employees that will ultimately be recorded will depend on the remeasurement of the outstanding awards through their vesting date.

(ii) Restricted Common Stock

During the three and nine months ended September 30, 2017, 2,884 and 1,062,795 shares of common stock, respectively were granted. As part of the 2017 Reorganization in May 2017, 1,059,911 shares of restricted common stock (adjusted for the merger exchange) were granted in exchange for the restricted common units that were cancelled as part of the 2017 Reorganization. These shares retained the same vesting schedule as the cancelled units. Private Synlogic treated these as modifications to the original grants of incentive units because the cancellation and reissuance was deemed to be concurrent. The calculation of the incremental compensation expense was based on the excess of the fair value of the award measured immediately before and after the modification. As a result of the modification, Private Synlogic recognized approximately $26,000 in equity-based compensation. No restricted common stock was granted during the three and nine months ended September 30, 2016.

The following table shows restricted stock activity:

	Restricted stock awards	
	Number of shares	Grant date fair value (per share)
Unvested at December 31, 2016	—	$ —
Awards exchanged upon 2017 Reorganization	1,059,911	13.35
Granted	2,884	19.01
Vested	(604,505)	9.38
Forfeited	(3,457)	13.53
Unvested at September 30, 2017	454,833	$ 13.56

During the three months ended September 30, 2017, 88,840 shares of restricted stock vested and approximately $0.2 million in equity compensation was recognized. During the nine months ended September 30, 2017, 604,505 shares of restricted stock vested, of which 501,231 shares were vested at the time of grant and 103,274 shares represent continued vesting of the grants and $0.3 million in equity compensation was recognized. During both the three and nine months ended September 30, 2016, no restricted stock vested and no equity-based compensation was recognized associated with restricted stock awards.

As of September 30, 2017, there was approximately $0.7 million of unrecognized share-based compensation related to restricted stock awards granted to employees, which is expected to be recognized over a weighted average period of 2.4 years. The total unrecognized share-based compensation cost will be adjusted for actual forfeitures as they occur. In addition, there was approximately $0.3 million of unrecognized share-based compensation, related to unvested restricted stock awards granted to non-employees which is expected to be recognized over a weighted average period of 0.7 years.

SYNLOGIC, INC. AND SUBSIDIARIES

Notes to Unaudited Consolidated Financial Statements (continued)

(11) Significant Agreements

(a) AbbVie Collaboration Agreement

In July 2015, the Company entered into an Agreement and Plan of Merger ("the Agreement") with AbbVie under which the Company granted an exclusive option to AbbVie to purchase IBDCo and agreed to collaborate in researching and developing an Investigatory New Drug ("IND") candidate for the treatment of IBD.

In exchange for the exclusive option to acquire IBDCo, initial research and development services, ongoing patent defense, and participation on the joint steering committee ("JSC"), AbbVie agreed to pay IBDCo an upfront, nonrefundable cash payment of $2.0 million, which IBDCo received in December 2015. AbbVie also agreed to pay IBDCo up to $16.5 million in development milestone payments, all of which were considered substantive, as well as an option exercise fee upon the execution of their option to buy IBDCo. In May 2017, the Company achieved the first development milestone under the Agreement for consideration of $2.0 million. The agreement also provides for royalty payments and payments upon the achievement of certain clinical, regulatory and commercial milestones.

The Agreement sets forth the Company's and AbbVie's respective obligations for development and delivery of an IND candidate package using reasonable commercial efforts. The JSC will make a determination as to the continuation of the collaboration at the achievement of the milestones.

At the inception of the Agreement, the Company identified the following deliverables: (i) an exclusive option to purchase IBDCo, (ii) research and development services and ongoing patent defense, and (iii) participation on the JSC. The Company also identified contingent deliverables related to four research and development milestones, delivery of an IND candidate package milestone, and transfer of ownership of IBDCo upon exercise of the option to buy IBDCo. The contingent deliverables have been excluded from the initial allocation and will be treated as a separate unit of accounting when and if delivered.

The Company concluded that none of the three deliverables identified at the inception of the Agreement has stand-alone value from the other undelivered elements. Accordingly, these deliverables represent a single unit of accounting.

As of September 30, 2017, the only consideration that is fixed and determinable is the nonrefundable upfront payment of $2.0 million. The consideration relates to the three identified deliverables that comprise the single unit of accounting, which will be recognized over the period of performance. The period of performance will be through the option period, which is closely tied to the completion of the research and development collaboration with AbbVie, and has been estimated to be 54 months. The Company will periodically review and, if necessary, revise the estimated period of performance.

During the three and nine months ended September 30, 2017, the Company recognized approximately $0.1 million and approximately $2.3 million, respectively, in revenue associated with the Agreement. During the three and nine months ended September 30, 2016, the Company recognized approximately $0.1 million and approximately $0.3 million, respectively, in revenue associated with the Agreement. As of September 30, 2017, there was approximately $1.2 million of deferred revenue related to the Agreement, which is classified as current or noncurrent in the consolidated balance sheets based on the Company's estimate of revenue that will be recognized within the next twelve months. All costs associated with the collaboration agreement will be recorded in research and development expense in the consolidated statements of operations and comprehensive loss in the period incurred.

SYNLOGIC, INC. AND SUBSIDIARIES

Notes to Unaudited Consolidated Financial Statements (continued)

(b) License Agreement with the Massachusetts Institute of Technology and Boston University

In April 2017, the Company exercised an option associated with the October 2014 agreement with Boston University and the Massachusetts Institute of Technology to acquire a license for certain intellectual property in exchange for $50,000. The execution of this option triggered an equity award for the issuance of 325,377 common units, which were converted to 325,377 common shares upon the 2017 Reorganization and converted to 179,999 common shares during the Merger. The Company recognized license fees of approximately $1.8 million upon issuance of the common units associated with the equity award. Additionally, the Company was required to pay approximately $0.3 million for prior patent costs incurred in connection with the option agreement. The Company recorded these amounts, including the fair value of the common stock issued to the licensors as research and development expense, as the licenses do not have future alternative use, in accordance with ASC Topic 730, *Research and Development.*

(12) Net Loss per Share/Unit

Basic net loss per share/unit is computed using the weighted-average number of common shares/units outstanding during the period. Diluted net loss per share/unit is computed using the sum of the weighted-average number of common shares/units outstanding during the period and if dilutive, the weighted-average number of potential common shares/units, including unvested restricted common shares/units and outstanding stock options.

The Company computed basic and diluted net loss per share/unit using the two-class method, which gives effect to the impact of outstanding participating securities. As the three and nine months ended September 30, 2017 and 2016 resulted in net losses attributable to common shareholders/unit holders, there is no income allocation required under the two-class method or dilution attributed to weighted-average shares outstanding in the calculation of diluted net loss per share/unit because the preferred shareholders/unit holders do not participate in losses of the Company. Accordingly, for periods in which the Company reports a net loss attributable to common shareholders/unit holders, diluted net loss per share/unit attributable to common shareholders/unit holders is the same as basic net loss per share/unit attributable to common shareholders/unit holders, since dilutive common shares/units are not assumed to have been issued if their effect is anti-dilutive.

As the 2017 Reorganization resulted in a one for one conversion of preferred units for preferred shares and common units for common stock, the conversion was not substantive for the purposes of this calculation and the weighted average was calculated as if outstanding equity was outstanding from the beginning of the period presented.

Additionally, on the Merger Closing Date, the Company issued shares of its common stock to Private Synlogic shareholders, at the Merger Exchange Ratio of 0.5532 shares of common stock, after taking into account the Reverse Stock Split, in exchange for each share of Private Synlogic preferred and common stock outstanding immediately prior to the Merger. The Merger Exchange Ratio was calculated by a formula pursuant to the Merger Agreement. For the purposes of calculating net loss per share, the Merger Exchange Ratio was applied retroactively to all periods presented.

SYNLOGIC, INC. AND SUBSIDIARIES

Notes to Unaudited Consolidated Financial Statements (continued)

The following table sets forth the computation of basic and diluted net loss per share attributable to common shareholders/unit holders (in thousands, except for share/unit and per share/unit amounts):

	Three months ended September 30,		Nine months ended September 30,	
	2017	2016	2017	2016
Numerator:				
Net loss attributable to common shareholders	$ (11,924)		$ (28,680)	$ —
Denominator:				
Weighted-average common shares outstanding - basic and diluted	7,169,241	—	3,642,125	—
Net loss per share attributable to common shareholders - basic and diluted	$ (1.66)	$ —	$ (7.87)	$ —
Numerator:				
Net loss attributable to common unit holders	$ —	$ (5,306)	$ —	$ (14,106)
Denominator:				
Weighted-average common units outstanding - basic and diluted	—	1,594,265	—	1,538,896
Net loss per unit attributable to common unit holders - basic and diluted	$ —	$ (3.33)	$ —	$ (9.17)

The Company's potentially dilutive shares/units, which include outstanding stock options and unvested restricted common stock/units, are considered to be common share/unit equivalents and are only included in the calculation of diluted net loss per share/unit when their effect is dilutive.

The following potential common shares/units, presented based on amounts outstanding at each period end, were excluded from the calculation of the diluted net loss per share/unit attributable to common shareholders/unit holders for the period indicated because including them would have had an anti-dilutive effect.

	As of September 30, 2017	2016
Unvested restricted common unit awards	—	436,977
Unvested restricted common stock awards	454,833	—
Outstanding options to purchase common stock	841,510	—

(13) Commitments and Contingencies

In the ordinary course of business, the Company may be subject to legal proceedings, claims and litigation as the Company operates in an industry susceptible to patent legal claims. The Company accounts for estimated losses with respect to legal proceedings and claims when such losses are probable and estimable. Legal costs associated with these matters are expensed when incurred. The Company is not currently a party to any material legal proceedings.

SYNLOGIC, INC. AND SUBSIDIARIES

Notes to Unaudited Consolidated Financial Statements (continued)

In July 2017, the Company entered into an agreement to lease approximately 41,346 square feet of laboratory and office space in Cambridge, Massachusetts. Annual rent is approximately $3.1 million. The ten-year lease is estimated to commence in January 2018 and contains provisions for a free-rent period, annual rent increases and an allowance for tenant improvements. Additionally, the Company has committed to a tenant improvement investment of approximately $1.6 million. In conjunction with the lease, the Company established a letter of credit of approximately $1.0 million secured by cash balances included in restricted cash.

In July 2017, the Company entered into an agreement to terminate its existing lease of laboratory and office space in Cambridge, Massachusetts at a date that is 30 days after the commencement of its new lease. No penalties are associated with the termination of the lease. As a result of the agreement to terminate its lease, the Company revised its estimate of the remaining amortization period of the deferred rent and its estimate of the remaining useful life our leasehold improvements associated with the 200 Sidney Street facility from 63 months to seven months.

(14) Related-Party Transactions

During the nine months ended September 30, 2017, the Company received repayment of the loan to its chief executive officer of approximately $0.2 million. The loan was repaid in June 2017, including interest which accrued at a rate of 0.6%.

The Company contracted services from one of its principal investors for the Company's former chief medical officer who was employed by the principal investor, as well as employed to support separate portfolio companies of the investor. The Company made no payments during the three and nine months ended September 30, 2017 and paid approximately $39,000 and $136,000 related to reimbursement for a portion of the salary of the former chief medical officer for the three and nine months ended September 30, 2016, respectively.

The Company contracted the services of The Orphan Group which specializes in supporting biotechnology companies in developing therapeutics toward diseases of high unmet medical needs in rare disorders. The Orphan Group is owned by the Company's former chief operating officer. The Company made no payments to the Orphan Group during the three and nine months ended September 30, 2017 and paid $0 and approximately $13,000 for contracted services during the three and nine months ended September 30, 2016, respectively.

(15) Subsequent Events

On October 13, 2017 the Company entered into a sales agreement with Cowen and Company, LLC ("Cowen") with respect to an at-the-market ("ATM") offering program under which the Company may offer and sell, from time to time at its sole discretion, shares of its common stock, par value $0.001 per share, through Cowen as its sales agent. In an ATM offering, exchange-listed companies incrementally sell newly issued shares into the secondary trading market through a designated broker-dealer at prevailing market prices.

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations.

Forward-Looking Information

The interim financial statements and this Management's Discussion and Analysis of Financial Condition and Results of Operations should be read together with our audited financial statements and accompanying notes for the year ended December 31, 2016 and 2015 included in Exhibit 99.3 of our Current Report on Form 8-K/A filed on September 26, 2017. In addition to historical information, this discussion and analysis contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended (the "Securities Act"), and Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). Please see "Risk Factors" beginning on page 33 for a discussion of certain risk factors applicable to our business, financial condition, and results of operations. Operating results are not necessarily indicative of results that may occur for the full fiscal year or any other future period. The term "Private Synlogic" refers to Synlogic Operating Company, Inc. (formerly known as Synlogic, Inc.) prior to the consummation of the Merger. Unless otherwise indicated, references to the terms the "combined company", "Synlogic", the "Company", "we", "our" and "us" refer to Private Synlogic prior to the consummation of the Merger and Synlogic, Inc. (formerly known as Mirna Therapeutics, Inc.) and its subsidiaries upon the consummation of the Merger described herein. The term "Mirna" refers to the Mirna Therapeutics, Inc. and its subsidiaries prior to the Merger.

Overview

We are a clinical-stage biopharmaceutical company focused on advancing our drug discovery and development platform for Synthetic Biotic™ medicines, which are designed using synthetic biology to genetically reprogram beneficial microbes to treat metabolic and inflammatory diseases and cancer. Synthetic Biotic medicines are generated from our proprietary drug discovery and development platform. We apply the principles and tools of synthetic biology to engineer beneficial probiotic bacteria to perform or deliver critical therapeutic functions such as compensating for missing or damaged metabolic pathways in patients. As living medicines, Synthetic Biotic medicines can be designed to sense a local disease context within a patient's body and to respond by metabolizing a toxic substance or delivering combinations of therapeutic factors.

Our initial focus is on metabolic diseases with the potential to be corrected following oral delivery of a living medicine to the gut. This includes a group of rare genetic diseases called inborn errors of metabolism ("IEMs"), as well as acquired metabolic diseases caused by organ dysfunction. Our approach to selecting these initial programs is based on the potential of the Synthetic Biotic platform to uniquely address conditions in which there is (1) unmet medical need with (2) well understood biology that is (3) based on an imbalance of a metabolite and (4) where that metabolite is available within or originating from the gut lumen. Additional considerations include the availability of animal models, relevant biomarkers and feasible clinical development paths. Our initial clinical and preclinical programs are focused on certain IEMs that share these characteristics. When delivered orally, Synthetic Biotic medicines are designed to act from the gut to compensate for the dysfunctional metabolic pathway with the intended consequence of reducing the levels of the toxic metabolites systematically. We believe success in IEMs will enable us to demonstrate the potential of our oral Synthetic Biotic medicines to address metabolic dysfunction while bringing meaningful change to the lives of patients suffering from these debilitating conditions.

Our two lead therapeutic programs are being developed for the treatment of UCD and PKU, both IEMs. There are unmet needs to improve current therapies for both indications and opportunities to reduce toxic metabolites that originate from the gut. Both also inform the potential of the Synthetic Biotic platform in unique ways. Our lead Synthetic Biotic program is SYNB1020. SYNB1020 is an oral therapy intended for the treatment of patients with hyperammonemia. In patients with these conditions ammonia accumulates in the body and becomes toxic leading to neurocognitive crisis and risk of long-term cognitive or behavioral impairment, coma or death. Hyperammonemic conditions include urea cycle disorders ("UCD") which are IEMs and hepatic encephalopathy ("HE") in patients with liver disease. SYNB1020 has received both Fast Track Designation and Orphan Drug Designation for UCD from the U.S. Food and Drug Administration (the "FDA"). We initiated a Phase 1 clinical trial in June 2017 to evaluate the safety and tolerability of SYNB1020 in healthy volunteers. In November 2017, we announced top-line data from this study that demonstrated that SYNB1020 was safe and well-tolerated and achieved proof of mechanism. In 2018, we intend to initiate two additional Phase 1b studies for SYNB1020 in patients with elevated blood ammonia. Our second program, SYNB1618, is an oral therapy intended for the treatment of phenylketonuria ("PKU"), an IEM in which the amino acid phenylalanine ("Phe") accumulates in the body as a result of genetic defects. Elevated levels of Phe are toxic to the brain and can lead to neurological dysfunction. SYNB1618 is designed to have activity in the gut of patients to reduce excess circulating Phe, resulting in normalization of levels in the blood and tissues. In October 2017, the FDA granted SYNB1618 orphan drug designation

for PKU. We are planning to file an investigational new drug ("IND") application and initiate a Phase 1 clinical trial for SYNB1618 in the first half of 2018. Our early-stage metabolic pipeline includes discovery-stage product candidates for additional IEMs, including maple syrup urine disease ("MSUD"), isovaleric acidemia ("IVA") and organic acidemias. These are rare metabolic deficiencies in which the toxic accumulation of metabolites such as branched chain amino acids in the case of MSUD can lead to neurological decline and death. There are no currently approved pharmaceutical therapies for these disorders, ultimately resulting in patients relying on liver transplants when possible. We believe that developing therapies for this group of rare diseases will demonstrate the potential of our oral Synthetic Biotic medicines to address metabolic dysfunction, while bringing meaningful change to lives of patients suffering from these debilitating conditions. We are also leveraging our proprietary technology platform to develop Synthetic Biotic medicines to treat a broader range of human diseases, including acquired metabolic diseases, inflammation and cancer. We also have a collaboration with AbbVie S.à.r.l. ("AbbVie") to develop Synthetic Biotic Medicines for the treatment of inflammatory bowel disease ("IBD").

We were incorporated in Delaware as TMC Therapeutics, Inc. on March 14, 2014. On July 15, 2014, TMC Therapeutics, Inc. changed its name to Synlogic, Inc. ("Private Synlogic" when referred to prior to the Merger (as defined below)). On July 2, 2015, the common and preferred shareholders of Private Synlogic executed the Synlogic, LLC Contribution Agreement (the "Contribution Agreement"), pursuant to which such common and preferred shareholders contributed such shareholders' equity interests in Private Synlogic in exchange for common and preferred units in a newly formed parent company named Synlogic, LLC (the "2015 Reorganization"). In addition, IBDCo was formed as a subsidiary of Synlogic, LLC, as part of the 2015 Reorganization, and we entered into a license, option and merger agreement with AbbVie for the development of treatments for IBD. In May 2017, we completed a series of transactions pursuant to which Synlogic, LLC merged with and into Private Synlogic with Private Synlogic continuing as the surviving corporation.

On August 28, 2017, Synlogic, Inc., formerly known as Mirna Therapeutics, Inc. (NASDAQ: MIRN) ("Mirna"), completed its business combination with Synlogic, Inc. in accordance with the terms of 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 1:7 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).

Under the terms of the Merger Agreement, Mirna issued shares of its common stock to Private Synlogic's stockholders, at an exchange ratio of 0.5532 shares of Mirna's common stock, after taking into account the Reverse Stock Split, for each share of Private Synlogic common stock and preferred stock outstanding immediately prior to the Merger("Merger Exchange Ratio"). The Merger Exchange Ratio was determined through arms'-length negotiations between Mirna and Private Synlogic. Mirna assumed all of the stock options outstanding under the Synlogic 2017 Stock Incentive Plan ("2017 Plan"), with such stock options henceforth representing the right to purchase a number of shares of Mirna's common stock equal to 0.5532 multiplied by the number of shares of Private Synlogic common stock previously represented by such options. Mirna also assumed the 2017 Plan.

Immediately after the Merger, there were 16,282,496 shares of our common stock outstanding. At this time, the former stockholders and optionholders of Private Synlogic owned, or held rights to acquire, approximately 82.4% of our fully-diluted common stock, which for these purposes is defined as our outstanding common stock , plus "in the money" options, assuming that all "in the money" options outstanding immediately prior to the Merger were exercised on a cashless basis immediately prior to the closing of the Merger (the "Fully-Diluted Common Stock"), with Mirna's stockholders and optionholders immediately prior to the Merger owning approximately 17.6% of our Fully-Diluted Common Stock.

We currently operate in one reportable business segment—the discovery and development of Synthetic Biotic medicines. To date, we have dedicated substantially all of our activities to the research and development of our product candidates. We have received approximately $155.5 million in proceeds to date as we financed our operations through multiple rounds of preferred equity funding, receipts from a convertible promissory note, payments received under the AbbVie Agreement and our merger with Mirna. Funding rounds include:

- approximately $3.0 million, net of expenses, from the sale of Series A-1 convertible preferred stock in July 2014;
- approximately $1.0 million, net of expenses, from the sale of contingently redeemable Series A-1 preferred stock in September 2014;

- approximately $6.9 million, net of expenses, from the sale of Series A-2 convertible preferred stock in May 2015;
- approximately $1.4 million, net of expenses, from the sale of contingently redeemable Series A-2 convertible preferred stock in May 2015;
- approximately $0.7 million, net of expenses, from the sale of Class A-2 preferred units in November 2015;
- approximately $14.5 million, net of expenses, from the sale of Class A-3 preferred units in February 2016;
- approximately $2.6 million, net of expenses, from the sale of contingently redeemable Class A-3 preferred units in February 2016;
- approximately $13.6 million, net of expenses, from the sale of Class B preferred units in February 2016;
- approximately $26.6 million, net of expenses, from the sale of Class B preferred units in March 2017; and
- approximately $40.4 million, net of expenses, from the sale of Series C convertible preferred stock in May 2017.

In April 2014, we entered into an agreement with one of our investors for an approximately $0.4 million convertible promissory note, which was converted into Series A-1 preferred stock in July 2014. In December 2015, we received $2.0 million from AbbVie as part of our collaboration agreement with AbbVie and another $2.0 million when we achieved a development milestone in May 2017. In August 2017, we generated approximately $40.4 million in proceeds, net of transaction costs, from our merger with Mirna.

We have not generated any revenue to date from product sales and have incurred significant operating losses since our inception in 2014. We have incurred net losses of approximately $11.9 million and $28.7 million for the three and nine months ended September 30, 2017, respectively, and approximately $5.3 million and $14.1 million for the three and nine months ended September 30, 2016, respectively. As of September 30, 2017, we had an accumulated deficit of approximately $60.0 million and we expect to incur losses for the foreseeable future as we develop our product candidates. We expect our expenses and capital requirements will increase substantially in connection with our ongoing activities, as we:

- complete preclinical studies, initiate and complete clinical trials for product candidates;
- contract to manufacture product candidates;
- advance research and development related activities to expand our product pipeline;
- seek regulatory approval for our product candidates;
- maintain, expand and protect our intellectual property portfolio;
- hire additional staff, including clinical, scientific, and management personnel;
- expand our existing infrastructure and secure space in a facility to support continued growth in our research and development efforts; and
- add operational and finance personnel to support product development efforts and to support operating as a public company.

We do not expect to generate product revenue unless and until we successfully complete clinical development and obtain regulatory approvals for our product candidates, either alone or in collaboration with third parties. Additionally, we expect to utilize third-party contract research organizations (“CRO”s) and contract manufacturing organizations (“CMO”s) to carry out our clinical development and manufacturing activities, and we do not yet have a commercial organization. If we obtain regulatory approval for any of our product candidates, we expect to incur significant expenses related to developing our internal commercialization capability to support product sales, marketing and distribution. Accordingly, we anticipate that we will seek to fund our operations through public or private equity or debt financings, collaborations or licenses, capital lease transactions or other available financing transactions. However, we may be unable to raise additional funds through these or other means when needed. Because of the numerous risks and uncertainties associated with product development, we are unable to predict the timing or amount of increased expenses or when or if it will be able to achieve or maintain profitability. Even if we are able to generate product revenue, we may not become profitable.

Recent Events

On October 13, 2017 we entered into a sales agreement with Cowen and Company, LLC ("Cowen") with respect to an at-the-market ("ATM") offering program under which we may offer and sell, from time to time at its sole discretion, shares of our common stock, par value $0.001 per share, through Cowen as our sales agent. In an ATM offering, exchange-listed companies incrementally sell newly issued shares into the secondary trading market through a designated broker-dealer at prevailing market prices.

Financial Overview

Revenue

Revenue to date is generated from our collaboration agreement with AbbVie. The collaboration agreement contains multiple deliverables, which include an exclusive option for AbbVie to acquire IBDCo and research and development milestones. Payments include an upfront payment of $2.0 million, which we received in December 2015, and a development milestone payment of $2.0 million, which we achieved in May 2017, and may include up to $14.5 million in additional development milestone payments, as well as royalties on product sales, payments upon the achievement of certain regulatory, clinical and commercial milestones, and the execution of AbbVie's option to acquire IBDCo. We expect our revenue to fluctuate for the foreseeable future as it is principally based on the achievement of research and development milestones under our collaboration agreement with AbbVie.

Research and Development Expense

Research and development expense consists of expenses incurred in connection with the discovery and development of our product candidates, including the conduct of preclinical and clinical studies and product development, which are expensed as they are incurred. These expenses consist primarily of:

- compensation, benefits and other employee related expenses;
- supplies to support our internal research and development efforts;
- research and development related facility and depreciation costs; and
- third-party contract costs relating to research, formulation, preclinical studies and regulatory operations.

The lengthy process of securing regulatory approvals for new drugs requires the expenditure of substantial resources. Any delay or failure to obtain regulatory approvals would materially adversely affect our product candidate development efforts and our business overall. Given the inherent uncertainties of pharmaceutical product development, we cannot estimate with any degree of certainty the likelihood, timing or cost of obtaining regulatory approval and marketing our product candidates and thus, when, if ever, our product candidates will generate revenues and cash flows.

The successful development of our product candidates is highly uncertain and subject to a number of risks. Refer to the risk factors under the heading *Risks Related to the Development of Our Product Candidates* in Part II, Item 1A, found elsewhere in this Quarterly Report on Form 10-Q.

We invest carefully in our pipeline, and the commitment of funding for each subsequent stage of our development programs is dependent upon the receipt of clear, supportive data. We anticipate that we will make determinations as to which additional programs to pursue and how much funding to direct to each program on an ongoing basis in response to the scientific and clinical data of each product candidate, as well as the competitive landscape and ongoing assessments of such product candidate's commercial potential. We expect our research and development costs will be substantial for the foreseeable future. We expect costs associated with our SYNB1020 and SYNB1618 programs to increase as the programs progress through and into clinical trials.

We track direct research and development expenses, consisting principally of external costs, such as costs associated with contract research organizations and manufacturing of preclinical and clinical drug product and other outsourced research and development expenses to specific product programs. Costs related to specific product candidates are tracked upon the selection of a product candidate. We do not allocate employee and consulting-related costs, costs associated with our platform and facility expenses, including depreciation or other indirect costs, to specific product candidate programs because these costs are deployed across multiple product candidate programs under

research and development and, as such, are separately classified. The table below summarizes our research and development expenses by categories of costs for the periods presented (in thousands):

	For the three months ended September 30,		For the nine months ended September 30,	
	2017	2016	2017	2016
SYNB1020	$ 1,958	$ 902	$ 4,122	$1,207
SYNB1618	2,119	—	3,814	—
External pre-development candidate expenses and unallocated expenses	1,482	1,378	5,835	3,882
Internal research and development expenses	3,396	1,853	8,834	4,794
	$ 8,955	$ 4,133	$22,605	$9,883

General and Administrative Expense

General and administrative expense consists primarily of compensation, benefits and other employee-related expenses for personnel in our administrative, finance, legal, information technology, investor relations, business development and human resource functions. Other costs include the legal costs of pursuing patent protection of our intellectual property, general and administrative related facility and information technology infrastructure costs and professional fees for accounting and legal services. We anticipate increases in expenses related to operating as a public company. These increases include legal fees, accounting fees, costs for director and officer liability insurance, fees for investor relations services and costs associated with implementing and complying with corporate governance, internal controls and similar requirements applicable to public companies. We charge all general and administrative expenses to operations as incurred.

Other Income(Expense)

Interest and investment income consists primarily of interest income earned on investments. Interest expense consists of expense related to our capital leases. Other expense consists primarily of losses on foreign currency translation.

Critical Accounting Policies and Estimates

Our discussion and analysis of our financial condition and results of operations is based upon our consolidated financial statements prepared in accordance with generally accepted accounting principles in the U.S.(“GAAP”). The preparation of these financial statements requires us to make certain estimates and assumptions that affect the reported amounts of assets and liabilities, the reported amounts of revenues and expenses during the reported periods and related disclosures. These estimates and assumptions, including those related to revenue recognition, research and development expenses and equity-based compensation are monitored and analyzed by us for changes in facts and circumstances, and material changes in these estimates could occur in the future. These critical estimates and assumptions are based on our historical experience, our observance of trends in the industry, and various other factors that are believed to be reasonable under the circumstances and form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from our estimates under different assumptions or conditions.

Results of Operations

The following discussion summarizes the key factors our management believes are necessary for an understanding of its consolidated financial results.

	For the three months ended		For the nine months ended	
	September 30, 2017	September 30, 2016	September 30, 2017	September 30, 2016
	(in thousands)		(in thousands)	
Revenue	$ 111	$ 111	$ 2,333	$ 333
Operating expenses:				
Research and development	8,955	4,133	22,605	9,883
General and administrative	3,231	1,286	8,634	4,555
Total operating expenses	12,186	5,419	31,239	14,438
Loss from operations	(12,075)	(5,308)	(28,906)	(14,105)
Other income (expense):				
Interest and investment income	170	3	267	3
Interest expense	(7)	(1)	(22)	(4)
Other expense	(12)	—	(19)	—
Other income (expense), net	151	2	226	(1)
Net loss	$ (11,924)	$ (5,306)	$ (28,680)	$ (14,106)

Three and Nine Months Ended September 30, 2017 Compared to Three and Nine Months Ended September 30, 2016

Revenue

	For the three months ended September 30,		Change		For the nine months ended September 30,		Change	
	2017	2016	$	%	2017	2016	$	%
	(dollars in thousands)				(dollars in thousands)			
Revenue	$111	$111	$—	0%	$ 2,333	$ 333	$2,000	601%

Revenue was $0.1 million for each of the three months ended September 30, 2017 and the three months ended September 30, 2016. The revenue recognized is associated with the upfront, nonrefundable $2.0 million payment from the AbbVie collaboration, which is being recognized over the expected term of the collaboration.

Revenue was $2.3 million for the nine months ended September 30, 2017 compared to $0.3 million for the nine months ended September 30, 2016. The increase was due to the $2.0 million development milestone achieved in the AbbVie collaboration in May 2017 and paid in July 2017 and recognized in the second quarter of 2017.

Operating Expenses

	For the three months ended September 30,		Change		For the nine months ended September 30,		Change	
	2017	2016	$	%	2017	2016	$	%
	(dollars in thousands)				(dollars in thousands)			
Operating expenses:								
Research and development	$ 8,955	$ 4,133	$4,822	117%	$22,605	$ 9,883	$12,722	129%
General and administrative	3,231	1,286	1,945	151%	8,634	4,555	4,079	90%
Total operating expenses	$12,186	$ 5,419	$6,767	125%	$31,239	$14,438	$16,801	116%

Research and Development Expense

Research and development expense was $9.0 million for the three months ended September 30, 2017 compared to $4.1 million in the corresponding period in 2016. The increase in research and development expense of $4.8 million was primarily due to an increase in external costs of $3.3 million associated with our Phase 1 clinical trial, preclinical studies, formulation development, and consulting fees. Increases of $1.0 million were associated with compensation, benefits and other employee-related expenses associated with increased headcount. An increase of $0.3 million was associated with research and development support costs, including increased rent and depreciation from our 200 Sidney Street facility, which we occupied in February 2016.

Research and development expense was $22.6 million for the nine months ended September 30, 2017 compared to $9.9 million in the corresponding period in 2016. The increase in research and development expense of $12.7 million was primarily the result of an increase in external costs of approximately $6.9 million associated with our Phase 1 clinical trial, preclinical studies, formulation development and consulting fees. The non-cash expense for the issuance of shares of common stock associated with the execution of the license agreement in April 2017 with the Massachusetts Institute of Technology and Boston University resulted in $1.8 million of the increase. Other increases in research and development expense include $3.1 million associated with compensation, benefits and other employee-related expenses associated with increased headcount, $0.6 million associated with research and development support costs, including increased rent and depreciation from our 200 Sidney Street facility, which we occupied in February 2016, and approximately $0.2 million in temporary support as we supplemented our workforce.

General and Administrative Expense

General and administrative expense for the three months ended September 30, 2017 was $3.2 million compared to $1.3 million for the corresponding period in 2016. The increase of $1.9 million was due to an increase of $1.0 million in professional fees related to our public reporting activities, which include legal, audit, investor relations, and filing fees as well as an increase of approximately $0.7 million of compensation, benefits and other employee-related expenses associated with increased headcount and equity compensation expense.

General and administrative expense for the nine months ended September 30, 2017 was $8.6 million compared to $4.6 million for the nine months ended September 30, 2016. The increase of $4.1 million was due to an increase of approximately $2.7 million in professional fees related to our public reporting activities, which include legal, audit, investor relations, and filing fees, as well as increased legal fees for patent filings and our May 2017 reorganization into a C-corp. In addition, an increase of $1.0 million was associated with compensation, benefits and other employee-related expenses associated with increased headcount and equity compensation expense.

Other Income (Expense)

	For the three months ended September 30,		Change		For the nine months ended September 30,		Change	
	2017	2016	$	%	2017	2016	$	%
	(dollars in thousands)				(dollars in thousands)			
Other income (expense), net	$ 151	$ 2	$149	7450%	$ 226	$ (1)	$227	-22700%

Other income (expense) for the three months ended September 30, 2017 was $0.2 million compared to $2,000 for the corresponding period in 2016. The increase in other income (expense) of $0.1 million was related to an increase in interest and investment income resulting from an interest-bearing account set up in September 2016 and an investment account acquired during the Merger with Mirna. These increases were partially offset by an increase in interest expense associated with the new capital lease which began in August 2017.

Other income (expense) for the nine months ended September 30, 2017 was $0.2 million compared to ($1,000) for the corresponding period in 2016. The increase of $0.2 million was primarily related to an increase in interest and investment income resulting from an interest-bearing account set up in September 2016 and an investment account acquired during the Merger with Mirna. These increases in interest and investment income were partially offset by an increase in interest expense associated with the new capital leases which began in December 2016 and August 2017.

Liquidity and Capital Resources

We have incurred losses since our inception on March 14, 2014 and, as of September 30, 2017, we had an accumulated deficit of approximately $60.0 million. We have financed our operations to date primarily through the sale of preferred stock, common stock, preferred units, payments received under our AbbVie collaboration agreement, interest earned on investments, and the merger with Mirna. At September 30, 2017, we had approximately $96.6 million in cash, cash equivalents, and marketable securities. Our cash and cash equivalents include amounts held in money market funds, stated at cost plus accrued interest, which approximates fair market value. Our available-for-sale securities include amounts held in U.S. government-sponsored securities and U.S. Treasury securities. We invest cash in excess of immediate requirements in accordance with our investment policy which limits the amounts we may invest in any one type of investment and required all investments held by us to maintain minimum ratings from Nationally Recognized Statistical Rating Organizations so as to primarily achieve liquidity and capital preservation.

During the nine months ended September 30, 2017, our cash balance increased approximately $64.6 million. The increase was primarily due to the proceeds of approximately $26.6 million from the sale of Series B preferred units, approximately $40.4 million from the sale of Series C preferred stock, and approximately $40.4 million, net of transaction costs, received in the Merger. The increase was partially offset by the cash used to operate our business, including payments related to, among other things, research and development and general and administrative expenses as we continued to invest in our primary drug candidates and support the development of our proprietary platform. We also made capital purchases and made payments on our capital leases.

The following table sets forth the major sources and uses of cash for each of the periods below (in thousands):

	Nine months ended September 30,	
	2017	2016
Net cash (used in) provided by:		
Operating activities	$ (22,034)	$ (13,834)
Investing activities	19,718	(1,738)
Financing activities	66,905	30,889
Net increase in cash:	$ 64,589	$ 15,317

Cash Flows from Operating Activities

Net cash used in operating activities was $22.0 million for the nine months ended September 30, 2017. The primary use of cash was our net loss of $28.7 million. This use of cash was partially offset by $4.6 million of non-cash items including depreciation, equity compensation and the issuance of stock for a license agreement, and an increase of $2.1 million in working capital primarily from increases in accrued expenses.

Net cash used in operating activities was $13.8 million for the nine months ended September 30, 2016. The primary uses of cash were our net loss of $14.1 million and a decrease of $0.4 million in working capital primarily from increases in prepaid research and development expenses, increases in accrued expenses and decreases in deferred revenue. These uses of cash were partially offset by non-cash items of $0.7 million primarily related to equity compensation.

Cash Flows from Investing Activities

Cash provided by investing activities for the nine months ended September 30, 2017 was $19.7 million and resulted primarily from the $40.7 million in net proceeds received in the Merger, of which $0.3 million remained in accounts payable as of September 30, 2017 and the proceeds from the maturity of marketable securities of $5.5 million. These proceeds were partially offset by uses of cash including the purchases of securities of $22.9 million, purchases of property and equipment of $2.5 million, including deposits related to the construction of leasehold improvements associated with the new lease, and $1.0 million in a letter of credit also established to support the new lease.

Cash used in investing activities for the nine months ended September 30, 2016 was $1.7 million and resulted primarily from the purchases of property and equipment.

Cash Flows from Financing Activities

Cash provided by financing activities for the nine months ended September 30, 2017 totaled $66.9 million and resulted from the net proceeds of the sale of Class B preferred units in March 2017 of $26.6 million and $40.4 million in net proceeds from the sale of Series C preferred stock in May 2017. These sources of cash were partially offset by payments on our capital leases.

Cash provided by financing activities for the nine months ended September 30, 2016 totaled $30.9 million and resulted from the net proceeds of the sale of Class A preferred units, contingently redeemable Class A preferred units and Class B preferred units in February 2016 of $14.5 million, $2.6 million and $13.7 million, respectively. These sources of cash were partially offset by payments on our capital leases.

Funding Requirements

To date, we have not commercialized any products and have not achieved profitability. We anticipate that we will continue to incur substantial net losses for the next several years as we further develop our product candidates, invest in our proprietary platform technology and operate as a publicly traded company.

We have generated revenue from an up-front license fee, but have not generated any product revenue since our inception and do not expect to generate any product revenue unless we receive regulatory approval for our product candidates. We believe that our cash on hand as of September 30, 2017, as well as additional milestone payments from our current and future collaborators, will be sufficient to meet our anticipated cash requirements for at least the next 12 months. Our forecast of the period of time through which our financial resources will be adequate to support our operations is a forward-looking statement that involves risks and uncertainties, and actual results could vary materially and negatively as a result of a number of factors, including the factors discussed in the section entitled “Risk Factors” in this Quarterly Report on Form 10-Q. We have based our estimates on assumptions that may prove to be wrong, and we could utilize our available capital resources sooner than we currently expect.

Due to the numerous risks and uncertainties associated with the development of our product candidates, we are unable to estimate precisely the amounts of capital outlays and operating expenditures necessary to complete the development of, and to obtain regulatory approval for, our product candidates. Our funding requirements will depend on many factors, including, but not limited to, the following:

- 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 rate of progress and cost of our commercialization activities;
- the success of our research and development efforts;
- the expenses we incur in marketing and selling our product candidates;
- the revenue generated by sales of our product candidates;
- the emergence of competing or complementary technological developments;
- the costs of filing, prosecuting, defending and enforcing any patent claims and other intellectual property rights;
- 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; and
- 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.

As an early-stage company, we are subject to a number of risks common to other life science companies, including, but not limited to, the ability to raise additional capital, development by our competitors of new technological innovations, risk of failure in preclinical studies, the safety and efficacy of our product candidates in clinical trials, the

regulatory approval process, market acceptance of our products once approved, lack of marketing and sales history, dependence on key personnel and protection of proprietary technology. Our therapeutic programs are currently pre-commercial, spanning discovery through early development and will require significant additional research and development efforts, including extensive preclinical and clinical testing and regulatory approval prior to commercialization of any product candidates. These efforts require significant amounts of additional capital, adequate personnel infrastructure and extensive compliance-reporting capabilities. There can be no assurance that our research and development will be successfully completed, that adequate protection for our intellectual property will be obtained, that any products developed will obtain necessary regulatory approval or that any approved products will be commercially viable. Even if our product development efforts are successful, it is uncertain when, if ever, we will generate revenue from product sales. We may never achieve profitability, and unless and until we do, we will continue to need to raise additional capital or obtain financing from other sources, such as strategic collaborations or partnerships. If we cannot expand our operations or otherwise capitalize on our business opportunities because we lack sufficient capital, our business, financial condition and results of operations could be materially adversely affected.

Contractual Commitments and Obligations

The disclosure of our contractual obligations and commitments as of December 31, 2016 is set forth under the heading "*Management's Discussion and Analysis of Financial Condition and Results of Operations – Contractual Commitments and Obligations*" in our proxy statement/prospectus/information statement on Form S-4 filed with the SEC on June 21, 2017, and amended on July 11, 2017 and declared effective by the SEC on July 13, 2017.

In July 2017, we entered into an agreement to lease approximately 41,346 square feet of laboratory and office space in Cambridge, Massachusetts. Annual rent is approximately $3.1 million. The ten-year lease is estimated to commence in January 2018 and contains provisions for a free-rent period, annual rent increases and an allowance for tenant improvements. Additionally, we have committed to a tenant improvement investment of approximately $1.6 million. In conjunction with the lease, we established a letter of credit of approximately $1.0 million.

In July 2017, we entered into an agreement to terminate our existing lease of laboratory and office space in Cambridge, Massachusetts at a date that is 30 days after the commencement of our new lease. No penalties are associated with the termination of the lease.

Related Party Transactions

We contracted services from one of our principal investors for our former chief medical officer who was employed by the principal investor, as well as employed to support separate portfolio companies of the investor. We made no payments during the three and nine months ended September 30, 2017 and paid approximately $39,000 and $0.1 million related to reimbursement for a portion of the salary of the former chief medical officer for the three and nine months ended September 30, 2016, respectively.

We contracted the services of The Orphan Group, which specializes in supporting biotechnology companies in developing therapeutics toward diseases of high unmet medical needs in rare disorders. The Orphan Group is owned by our former chief operating officer. We made no payments to the Orphan Group during the three and nine months ended September 30, 2017 and paid $0 and approximately $13,000 for contracted services during the three and nine months ended September 30, 2016, respectively.

During the nine months ended September 30, 2017, we received repayment of the loan to our chief executive officer of approximately $0.2 million. The loan was repaid in June 2017, including interest which accrued at a rate of 0.6%.

For additional transactions with related parties which may fall outside of the reporting period of this section, please see the section entitled "*Related Party Transactions of Directors and Executive Officers of the Combined Organization – Synlogic Transactions"* in our proxy statement/prospectus/information statement on Form S-4 filed with the SEC on June 21, 2017, and amended on July 11, 2017 and declared effective by the SEC on July 13, 2017.

Off-Balance Sheet Arrangements

We do not have any relationships with unconsolidated entities or financial partnerships, such as entities often referred to as structured finance or special purpose entities, that would have been established for the purpose of facilitating off-balance sheet arrangements (as that term is defined in Item 303 (a)(4)(ii) of Regulation S-K) or other contractually narrow or limited purposes. As such, we are not exposed to any financing, liquidity, market or credit risk that could arise if we had engaged in those types of relationships. We enter into guarantees in the ordinary course of business related to the guarantee of our performance and the performance of our subsidiaries.

JOBS Act

Section 107 of the JOBS Act provides that an emerging growth company can take advantage of the extended transition period provided in Section 7(a)(2)(B) of the Securities Act for complying with new or revised accounting standards. Thus, an emerging growth company can delay the adoption of certain accounting standards until those standards would otherwise apply to private companies. We have irrevocably elected not to avail ourselves of this extended transition period and, as a result, we will adopt new or revised accounting standards on the relevant dates on which adoption of such standards is required for other companies.

New Accounting Pronouncements

From time to time, new accounting pronouncements are issued by the Financial Accounting Standards Board (the "FASB") or other standard setting bodies that we adopt by the specified effective date. Unless otherwise discussed, we believe that the impact of recently issued standards that are not yet effective will not have a material impact on our consolidated financial position or results of operations upon adoption.

The recently issued accounting pronouncements described in our consolidated financial statements as of and for the year ended December 31, 2016, and the notes thereto in our Current Report on Form 8-K/A filed with the SEC on September 26, 2017 have had no material changes during the three and nine months ended September 30, 2017, except as described below.

In May 2014, the FASB issued ASU 2014-09—Revenue from Contracts with Customers (Topic 606), which supersedes all existing revenue recognition requirements, including most industry-specific guidance. This standard is based on the principle that an entity should recognize revenue when it transfers goods or services to customers in an amount that reflects the consideration that the company expects to receive. This standard also requires additional disclosure about the nature, amount, timing and uncertainty of assets recognized from costs incurred to fulfill a contract. It will be effective for annual reporting periods beginning after December 15, 2017, including interim periods within those annual periods. Early adoption is permitted any time after the original effective date, which for us is January 1, 2017. Entities have the option of using either a full retrospective or a modified retrospective approach for the adoption of the new standard. We are continuing to assess the impact that this standard will have on our financial statements and the expected method of transition. Our revenue during the nine months ended September 30, 2017 is from our collaboration arrangement. During the fourth quarter of 2017, we plan to complete our review to determine the impact that this standard could have on our consolidated financial statements and disclosures.

In March 2016, the FASB issued ASU 2016-09—Compensation—Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting ("ASU 2016-09"). The amendments in ASU 2016-09 are to simplify several aspects of the accounting for stock-based payment transactions including the income tax consequences, classification of awards as either equity or liabilities, and classification on the statement of cash flows. In addition, companies will now have to elect whether to account for forfeitures on share-based payments by (1) recognizing forfeitures of awards as they occur or (2) estimating the number of awards expected to be forfeited and adjusting the estimate when it is likely to change, as is currently required. We adopted ASU 2016-09 on April 1, 2017 on a modified retrospective basis, and elected to recognize forfeitures as they occur. We recorded an insignificant cumulative effect adjustment as a result of the adoption of this amendment. The adoption did not have a material impact on our condensed consolidated financial statements and related disclosures.

In January 2017, the FASB issued ASU 2017-01, Business Combinations (Topic 805) Clarifying the Definition of a Business, which clarifies the definition of a business with the objective of adding guidance to assist entities with evaluating whether transactions should be accounted for as acquisitions (or disposals) of assets or businesses. The definition of a business affects many areas of accounting including acquisitions, disposals, goodwill, and consolidation. We adopted ASU 2017-01 on April 1, 2017 and followed the guidance when determining the accounting treatment of our merger with Mirna.

Item 3. Quantitative and Qualitative Disclosures About Market Risk

Interest Rate Risk

The primary objective of our investment activities is to preserve capital for the purpose of funding operations, while at the same time maximizing the income we receive from investments without materially increasing risk. To achieve these objectives, our investment policy allows us to maintain a portfolio of cash, cash equivalents and short-term investments in a variety of securities, including commercial paper and money market funds. Our cash is deposited in and invested through highly rated financial institutions in North America.

Cash and cash equivalents at September 30, 2017 consisted of cash and money market funds. Our short-term investments consisted of U.S. government-sponsored securities and U.S. Treasury securities. Our primary exposure to market risk is interest income sensitivity, which is affected by changes in the general level of interest rates, particularly because our investments are in short-term marketable securities. Due to the short-term duration of our investment portfolio and the low risk profile of our instruments we do not believe that an increase or decrease in market rates would have a material impact on us. We do not currently hedge interest rate exposure.

We do not believe that our cash, cash equivalents, available-for-sale investments and restricted cash have significant risk of default or illiquidity at this time, as they are invested in securities issued by the U.S. government. While we believe our cash, cash equivalents, available-for-sale investments and restricted cash do not contain excessive risk, we cannot provide absolute assurance that in the future our investments will not be subject to adverse changes in market value. We maintain significant amounts of cash and restricted cash at one or more financial institutions that are in excess of federally insured limits.

Item 4. Controls and Procedures

Definition and limitations of disclosure controls

Our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended, or the Exchange Act) are controls and other procedures that are designed to ensure that information required to be disclosed in our reports filed under the Exchange Act, such as this report, is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms. Disclosure controls and procedures are also designed to ensure that such information is accumulated and communicated to our management, including the Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosure. Our management evaluates these controls and procedures on an ongoing basis.

There are inherent limitations to the effectiveness of any system of disclosure controls and procedures. These limitations include the possibility of human error, the circumvention or overriding of the controls and procedures and reasonable resource constraints. In addition, because we have designed our system of controls based on certain assumptions, which we believe are reasonable, about the likelihood of future events, our system of controls may not achieve its desired purpose under all possible future conditions. Accordingly, our disclosure controls and procedures provide reasonable assurance, but not absolute assurance, of achieving their objectives.

Evaluation of disclosure controls and procedures

Our Chief Executive Officer and our Chief Financial Officer, after evaluating the effectiveness of our disclosure controls and procedures, believe that as of the end of the period covered by this report, our disclosure controls and procedures were effective in providing the requisite reasonable assurance that material information required to be disclosed in the reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely decisions regarding the required disclosure.

Changes in internal control over financial reporting

On August 28, 2017, we completed a reverse merger with Mirna Therapeutics, Inc. and our management is in the process of evaluating any related changes to our internal control over financial reporting as a result of this integration. Except for any changes relating to this integration, there has been no change in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) that occurred during the period covered by this report that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

PART II – OTHER INFORMATION

Item 1. Legal Proceedings.

We are not currently a party to any material legal proceedings.

Item 1A. Risk Factors.

RISK FACTORS

Our future operating results could differ materially from the results described in this report due to the risks and uncertainties related to our business, including those discussed below. Furthermore, these factors represent risks and uncertainties that could cause actual results to differ materially from those implied by forward-looking statements. Accordingly, in evaluating our business, we encourage you to consider the following discussion of risk factors, in its entirety, in addition to other information contained in this Quarterly Report on Form 10-Q and our other public filings with the SEC.

In the following discussion of risk factors, references to "Mirna" refer to the business of Mirna Therapeutics, Inc. as it existed prior to the Merger on August 28, 2017 and references to "Private Synlogic" refer to the business of Synlogic, Inc. prior to the Merger on August 28, 2017. References to "we", "us", "our" and similar terms refer to the combined business of Synlogic, Inc. after the Merger on August 28, 2017.

Risks Related to Our Financial Condition, Capital Requirements and Operating Results

We are a clinical-stage biopharmaceutical company with a history of losses, and we expect to continue to incur losses for the foreseeable future, and we may never achieve or maintain profitability.

We are a clinical-stage biopharmaceutical company focused on the development of Synthetic Biotics and we have incurred significant operating losses since our inception in 2014. Our net loss was approximately $21.0 million and $8.5 million for the fiscal years ended December 31, 2016 and 2015, respectively, and approximately $28.7 million for the nine months ended September 30, 2017. As of September 30, 2017, we had an accumulated deficit of approximately $60.0 million. To date, we have not generated any product revenue. Substantially all of our losses have resulted from expenses incurred in connection with our research and development programs and from general and administrative costs associated with our operations. We have no products on the market and have initiated clinical development for only one product candidate, SYNB1020, and expect that it will be many years, if ever, before we have a product candidate ready for commercialization.

We have not generated, and do not expect to generate, any product revenue for the foreseeable future, and we expect to continue to incur significant operating losses for the foreseeable future due to the cost of research and development, preclinical studies and clinical trials, the regulatory review process for product candidates, and the development of manufacturing and marketing capabilities for any product candidates approved for commercial sale. The amount of our potential future losses is uncertain. To achieve profitability, we must successfully develop product candidates, obtain regulatory approvals to market and commercialize product candidates, manufacture any approved product candidates on commercially reasonable terms, establish a sales and marketing organization or suitable third-party alternatives for any approved product candidates and raise sufficient funds to finance our business activities. We may never succeed in these activities and, even if we do, may never generate revenues that are significant or large enough to achieve profitability. Even if we do achieve profitability, we may not be able to sustain or increase profitability on a quarterly or annual basis. Our failure to become and remain profitable would decrease our value and could impair our ability to raise capital, maintain our research and development efforts, expand our business or continue our operations. A decline in our value could also cause our stockholders to lose all or part of their investment.

We will require substantial additional funding, which may not be available on acceptable terms, or at all.

We have used substantial funds to discover and develop our programs and proprietary drug development platform and will require substantial additional funds to conduct further research and development, including preclinical studies and clinical trials of our product candidates, seek regulatory approvals for our product candidates and manufacture and market any products that are approved for commercial sale. We expect that the capital resources available to us as of September 30, 2017 will be sufficient to meet our anticipated cash requirements for at least the next 12 months. Our future capital requirements and the period for which we expect our existing resources to support our operations may vary significantly from what we expect. Our monthly spending levels vary based on new and ongoing research and development and corporate activities. Because we cannot be certain of the length of time or activities associated with successful development and commercialization of our product candidates, we are unable to estimate the actual funds we will require to develop and commercialize them.

We do not expect to realize any appreciable revenue from product sales or royalties in the foreseeable future, if at all. Our revenue sources will remain very limited unless and until our product candidates complete clinical development and are approved for commercialization and successfully marketed. To date, we have primarily financed our operations through sales of our securities, our third-party collaborations and our merger with Mirna. We intend to seek additional funding in the future through collaborations, equity or debt financings, credit or loan facilities or a combination of one or more of these financing sources. Our ability to raise additional funds will depend on financial, economic and other factors, many of which are beyond our control. Additional funds may not be available to us on acceptable terms or at all. If we raise additional funds by issuing equity or convertible debt securities, our stockholders will suffer dilution and the terms of any financing may adversely affect the rights of our stockholders. In addition, as a condition to providing additional funds to us, future investors may demand, and may be granted, rights superior to those of existing stockholders. Debt financing, if available, may involve restrictive covenants limiting our flexibility in conducting future business activities, and, in the event of insolvency, debt holders would be repaid before holders of equity securities received any distribution of corporate assets.

If we are unable to obtain funding on a timely basis or on acceptable terms, or at all, we may have to delay, limit or terminate our research and development programs and preclinical studies or clinical trials, if any, limit strategic opportunities or undergo reductions in our workforce or other corporate restructuring activities. We also could be required to seek funds through arrangements with collaborators or others that may require us to relinquish rights to some of our product candidates or technologies that we would otherwise pursue on our own.

Our quarterly and annual operating results may fluctuate in the future. As a result, we may fail to meet the expectations of research analysts or investors, which could cause our stock price to decline.

Our financial condition and operating results may fluctuate from quarter to quarter and year to year in the future due to a variety of factors, many of which are beyond our control. Factors relating to our business that may contribute to these fluctuations include the following factors, as well as factors described elsewhere in this Quarterly Report on Form 10-Q and others:

- our ability to achieve or maintain profitability;
- our ability to develop and maintain Synthetic Biotic technologies;
- our ability to manage our growth;
- the outcomes of research programs, clinical trials, or other product development and approval processes;
- our ability to accurately report our financial results in a timely manner;
- our dependence on, and the need to attract and retain, key management and other personnel;
- our ability to obtain, protect and enforce our intellectual property rights;
- our ability to prevent the theft or misappropriation of our intellectual property, know-how or technologies;
- potential advantages that our competitors and potential competitors may have in securing funding or developing competing technologies or products; and
- our ability to obtain additional capital that may be necessary to expand our business.

Due to the various factors mentioned above, and others, the results of any prior quarterly or annual periods should not be relied upon as indications of our future operating performance.

Our stock price is volatile and our stockholders may not be able to resell shares of our common stock at or above the price they paid.

The trading price of our common stock is highly volatile and could be subject to wide fluctuations in response to various factors, some of which are beyond our control, such as reports by industry analysts, investor perceptions or negative announcements by other companies involving similar technologies or diseases. These factors also include those discussed in this “Risk Factors” section of this Quarterly Report on Form 10-Q and others such as:

- announcements relating to collaborations that we may enter into with respect to the development or commercialization of our product candidates;

- announcements relating to the receipt, modification or termination of government contracts or grants;
- termination or delay of a development program;
- product liability claims related to our clinical trials or product candidates;
- prevailing economic conditions;
- additions or departures of key personnel;
- business disruptions caused by earthquakes or other natural disasters;
- disputes concerning our intellectual property or other proprietary rights;
- FDA or other U.S. or foreign regulatory actions affecting us or our industry;
- sales of our common stock by the company, our executive officers and directors or our Stockholders in the future;
- future sales or issuances of equity or debt securities by us;
- lack of an active, liquid and orderly market in our common stock;
- fluctuations in our quarterly operating results; and
- the issuance of new or changed securities analysts' reports or recommendations regarding us.

In addition, the stock markets in general, and the markets for pharmaceutical, biopharmaceutical and biotechnology stocks in particular, have experienced extreme volatility that have been often unrelated to the operating performance of the issuer. These broad market fluctuations may adversely affect the trading price or liquidity of our common stock. In the past, when the market price of a stock has been volatile, holders of that stock have sometimes instituted securities class action litigation against the issuer. If any of our stockholders were to bring such a lawsuit against us, we could incur substantial costs defending the lawsuit and the attention of our management would be diverted from the operation of our business.

Our short operating history may make it difficult for stockholders to evaluate the success of our business to date and to assess our future viability.

We are a clinical-stage biopharmaceutical company with a limited operating history. We commenced active operations in 2014. Our operations to date have been limited to organizing and staffing our company, research and development activities, business planning and raising capital. In June 2017, we initiated a Phase 1 clinical trial with SYNB1020, however all of our other therapeutic programs are still in the preclinical development stage. We will need to transition from a company with a research focus to a company capable of supporting clinical development and commercial activities. In addition, we expect to complete preclinical studies and to initiate a Phase 1 clinical trial of SYNB1618 in the first half of 2018. We have not yet demonstrated our ability to successfully complete large-scale, pivotal clinical trials, obtain marketing approvals, manufacture a commercial-scale product, or arrange for a third party to do so on our behalf, or conduct sales and marketing activities necessary for successful product commercialization. Typically, it takes many years to develop one new product candidate from the time it is discovered to the time that it becomes available for treating patients. We may encounter unforeseen expenses, difficulties, complications, delays and other known and unknown factors that may hinder our success in commercializing one or more of our product candidates. Further, drug development is a capital-intensive and highly speculative undertaking that involves a substantial degree of risk. You should consider our prospects in light of the costs, uncertainties, delays and difficulties frequently encountered by companies in the early stages of development and clinical trials. Any forward-looking statements regarding our future prospects, plans or viability may not be as accurate as they may be if we had a longer operating history or a history of successfully developing and commercializing pharmaceutical products.

Risks Related to the Development of Our Product Candidates

Clinical trials are costly, time consuming and inherently risky, and we may fail to demonstrate safety and efficacy to the satisfaction of applicable regulatory authorities.

Clinical development of a product candidate is expensive, time consuming and involves significant risk. We cannot guarantee that any clinical trials we undertake to conduct will be conducted as planned or completed on schedule or at all. A failure of one or more clinical trials can occur at any stage of development. Events that may prevent successful or timely completion of clinical development of our product candidates include but are not limited to:

- inability to generate satisfactory preclinical or other non-clinical trials, including, toxicology, or other in vivo or in vitro data or diagnostics to support the initiation or continuation of clinical trials;

- delays in reaching agreement on acceptable terms with CROs and clinical trial sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and clinical trial sites;
- delays in obtaining required institutional review board approval at each clinical trial site;
- failure to permit the conduct of a clinical trial by regulatory authorities, after review of an investigational new drug or equivalent foreign application or amendment;
- delays in recruiting qualified patients in our clinical trials;
- failure by clinical sites or CROs or other third parties to adhere to clinical trial requirements;
- failure by us, clinical sites, CROs or other third parties to perform in accordance with the good clinical practices requirements of the FDA or applicable foreign regulatory guidelines;
- patients dropping out of the clinical trials;
- occurrence of adverse events, unacceptable side effects or toxicity issues associated with our product candidates;
- imposition by the FDA of a clinical hold or the requirement by other similar regulatory agencies that one or more clinical trials be delayed or halted;
- changes in regulatory requirements and guidance that require amending or submitting new clinical protocols or performing additional nonclinical studies;
- the ultimate affordability of the cost of clinical trials of our product candidates;
- negative or inconclusive results from our clinical trials that may result in us deciding, or regulators requiring us, to conduct additional clinical trials or abandon such clinical trials and/or clinical trials or development programs in other ongoing or planned indications for a product candidate; and
- delays in reaching agreement on acceptable terms with third-party manufacturers or delays or failure in manufacturing sufficient quantities of our product candidates for use in clinical trials.

Any inability to successfully complete clinical development and obtain regulatory approval for our product candidates could result in additional costs to us or impair our ability to generate revenue. In addition, if we make manufacturing or formulation changes to our product candidates, we may need to conduct additional preclinical studies or the results obtained from such new formulation may not be consistent with previous results obtained. Clinical trial delays could also shorten any anticipated periods of patent exclusivity for our product candidates and may allow competitors to develop and bring products to market before we do, which could impair our ability to successfully commercialize our product candidates and may harm our business and results of operations.

The approach we are taking to discover and develop novel therapeutics using synthetic biology to create novel medicines is unproven and may never lead to marketable products.

The scientific discoveries that form the basis for our efforts to generate and develop our product candidates are relatively recent. The scientific evidence to support the feasibility of developing drugs based on our approach is both preliminary and limited. Synthetic Biotics represent a novel therapeutic modality and their successful development by us may require additional studies and efforts to optimize their therapeutic potential. Any product candidates that we develop may not demonstrate in patients the therapeutic properties ascribed to them in laboratory and other preclinical studies, and they may interact with human biological systems in unforeseen, ineffective or even harmful ways. If we are not able to successfully develop and commercialize product candidates based upon this technological approach, we may never become profitable and the value of our capital stock may decline.

Our Synthetic Biotic product candidates are based on a relatively novel technology, which makes it difficult to predict the time and cost of development and of subsequently obtaining regulatory approval, if at all.

We have concentrated our research and development efforts to date on a limited number of product candidates based on our Synthetic Biotic therapeutic platform and identifying our initial targeted disease indications. Our future success depends on our successful development of viable product candidates. There can be no assurance that we will not experience problems or delays in developing our product candidates and that such problems or delays will not cause unanticipated costs, or that any such development problems can be solved.

The clinical trial and manufacturing requirements of the FDA, the European Medicines Agency and other regulatory authorities, and the criteria these regulators use to determine the safety and efficacy of a product candidate, vary substantially according to the type, complexity, novelty and intended use and market of the product candidate. The regulatory approval process for novel product candidates such as Synthetic Biotic therapeutics can be more expensive and take longer than for other, better known or more extensively studied therapeutic modalities. It is difficult to determine how long it will take or how much it will cost to obtain regulatory approvals for our product candidates in either the United States or the European Union or how long it will take to commercialize our product candidates, even if approved for marketing. Approvals by the European Medicines Agency or national regulatory agencies may not be indicative of what the FDA, and vice versa, may require for approval and different or additional preclinical studies or clinical trials may be required to support regulatory approval in each respective jurisdiction. In addition, the FDA has advised us that the clinical development of SYNB1020 does not require submission to the National Institutes of Health's ("NIH") Recombinant DNA Advisory Committee ("RAC"), a committee that reviews human gene transfer protocols. Nevertheless, if RAC review is deemed necessary by one or more of our clinical trial sites that receives NIH funding, our clinical trials could be delayed. Our product candidates do not involve gene transfers to humans, and we believe that they do not meet any of the criteria for that that type of review. Delay or failure to obtain, or unexpected costs in obtaining, the regulatory approval necessary to bring a potential product candidate to market could decrease our ability to generate sufficient product revenue, and our business, financial condition, results of operations and prospects may be harmed.

We may not be successful in our efforts to use and expand our development platform to build a pipeline of product candidates.

A key element of our strategy is to use our targeted focus and experienced management and scientific team to create Synthetic Biotic medicines that can be deployed against a broad range of human disease in order to build a pipeline of product candidates. Although our research and development efforts to date have resulted in potential product candidates, we may not be able to continue to identify and develop additional product candidates. Even if we are successful in continuing to build our pipeline, the potential product candidates that we identify may not be suitable for clinical development. For example, these potential product candidates may be shown to have harmful side effects or other characteristics that indicate that they are unlikely to be drugs that will receive marketing approval and achieve market acceptance. If we do not successfully develop and commercialize product candidates based upon our approach, we will not be able to obtain product revenue in future periods, which likely would result in significant harm to our financial position. There is no assurance that we will be successful in our preclinical and clinical development, and the process of obtaining regulatory approvals will, in any event, require the expenditure of substantial time and financial resources.

Our product candidates may cause undesirable side effects or have other properties that could delay or prevent their regulatory approval, limit the commercial viability of an approved label, or result in significant negative consequences following marketing approval, if any.

Undesirable side effects caused by our product candidates could cause us or regulatory authorities to interrupt, delay or terminate our clinical trials or result in a restrictive label or delay regulatory approval by the FDA or comparable foreign authorities. Undesirable side effects and negative results for other indications may negatively impact the development and potential for approval of our product candidates for their proposed indications.

Additionally, even if one or more of our product candidates receives marketing approval, and we or others later identify undesirable side effects caused by such products, potentially significant negative consequences could result, including but not limited to:

- regulatory authorities may withdraw approvals of such products;
- regulatory authorities may require additional warnings on the labels of such products;

- we may be required to create a risk evaluation and mitigation strategy ("REMS") plan, which could include a medication guide outlining the risks of such side effects for distribution to patients, a communication plan for healthcare providers, and/or other elements to assure safe use;
- we could be sued and held liable for harm caused to patients; and
- our reputation may suffer.

Any of these events could prevent us from achieving or maintaining market acceptance of a product candidate, even if approved, and could significantly harm our business, results of operations, and prospects.

Our product development program may not uncover all possible adverse events that patients who take our product candidates may experience. The number of subjects exposed to our product candidates during clinical trials and the average exposure time in the clinical development program may be inadequate to detect rare adverse events, or chance findings, that may only be detected once the product is administered to more patients and for greater periods of time.

Clinical trials by their nature utilize a sample of the potential patient population. However, with a limited number of patients and limited duration of exposure, we cannot be fully assured that uncommon or severe side effects of our product candidates will be uncovered. Such side effects may only be uncovered with a significantly larger number of patients exposed to the drug. If such safety problems occur or are identified after a product candidate reaches the market, the FDA may require that we amend the labeling of the product or recall the product, or may even withdraw approval for the product. Any of these events could prevent us from achieving or maintaining market acceptance of a product candidate, even if approved, and could significantly harm our business, results of operations, and prospects.

We are heavily dependent on the success of our product candidates. Some of our product candidates have produced results in preclinical settings to date, but none of our product candidates have completed all required clinical trials, and we cannot give any assurance that we will generate data for any of our product candidates sufficient to receive regulatory approval in our planned indications, which will be required before they can be commercialized.

We have invested substantially all of our efforts and financial resources to identify, acquire and develop our portfolio of product candidates. Our future success is dependent on our ability to successfully further develop, obtain regulatory approval for, and commercialize one or more product candidates. We currently generate no revenue from sales of any products, and we may never be able to develop or commercialize a product candidate.

In addition, only our lead product candidate has advanced into clinical trials, and none of our product candidates has advanced into any pivotal clinical trial, for our proposed indications and it may be years before any additional clinical trials, including any pivotal clinical trial, are initiated and completed, if at all. We are not permitted to market or promote any of our product candidates before we receive regulatory approval from the FDA or comparable foreign regulatory authorities, and we may never receive such regulatory approval for any of our product candidates. We cannot be certain that any of our product candidates will be successful in clinical trials or receive regulatory approval. Further, our product candidates may not receive regulatory approval even if they are successful in clinical trials. If we do not receive regulatory approvals for our product candidates, we may not be able to continue our operations.

If we fail to obtain or maintain orphan drug exclusivity for some of our products, our competitors may obtain approval to sell competing drugs to treat the same conditions and our revenues will be reduced.

As part of our business strategy, we have developed and may in the future develop product candidates that may be eligible for FDA and European Commission orphan drug designation. In August 2016, the FDA granted orphan drug designation to SYNB1020 for the treatment of UCD and in October 2017, the FDA granted orphan drug designation to SYNB1618 for the treatment of PKU. Under the Orphan Drug Act, the FDA may designate a product as an orphan drug if it is intended to treat, diagnose or prevent rare diseases or conditions that affect fewer than 200,000 people in the United States. In the EU, orphan drug designation may be granted to drugs intended to treat, diagnose or prevent a life-threatening or chronically debilitating disease having a prevalence of no more than five in 10,000 people in the EU. The company that first obtains FDA approval for a designated orphan drug for the associated rare disease receives marketing exclusivity for use of that drug for the stated condition for a period of seven years. Orphan drug exclusive marketing rights may be lost under several circumstances, including a later determination by the FDA that the request for designation was materially defective or if the manufacturer is unable to assure sufficient quantity of the drug. Similar regulations are available in the EU with a ten-year period of market exclusivity.

Because the extent and scope of patent protection for some of our product candidates is limited, obtaining orphan drug designation is especially important for any product candidates that may be eligible for orphan drug designation. For eligible products, we plan to rely on the exclusivity period under the Orphan Drug Act to maintain a competitive position. If we do not obtain orphan drug designation for our product candidates that do not have broad patent protection, our competitors may then seek to sell a competing drug to treat the same condition and our revenues, if any, may be adversely affected thereby.

Even though we have obtained orphan drug designation for certain of our product candidates, and intend to seek orphan drug designation for other product candidates, there is no assurance that we will be the first to obtain marketing approval for any particular rare indication. Further, even though we have obtained orphan drug designation for certain of our product candidates, or even if we obtain orphan drug designation for other potential product candidates, such designation may not effectively protect us from competition because different drugs can be approved for the same condition and the same drug can be approved for different conditions and potentially used off-label in the orphan indication. Even after an orphan drug is approved, the FDA can subsequently approve a competing drug for the same condition for several reasons, including, if the FDA concludes that the later drug is safer or more effective or makes a major contribution to patient care. Orphan drug designation neither shortens the development time or regulatory review time of a drug, nor gives the drug any advantage in the regulatory review or approval process.

Product development involves a lengthy and expensive process with an uncertain outcome, and results of earlier preclinical studies and clinical trials may not be predictive of future clinical trial results.

The results from preclinical studies or early clinical trials of a product candidate may not predict the results that will be obtained in subsequent subjects or in later stage clinical trials of that product candidate or any other product candidate. Flaws in the design of a clinical trial may not become apparent until the clinical trial is well advanced. We have limited experience in designing clinical trials and we may be unable to design and execute clinical trials to support regulatory approval of our product candidates. In addition, preclinical study and clinical trial data are often susceptible to varying interpretations and analyses. Product candidates that seemingly perform satisfactorily in preclinical studies and clinical trials may nonetheless fail to obtain regulatory approval. There is a high failure rate for drugs proceeding through clinical trials. A number of companies in the pharmaceutical and biotechnology industries have suffered significant setbacks in clinical development even after achieving promising results in earlier studies, and any such setbacks in our clinical development could negatively affect our business and operating results.

If we experience delays or difficulties in the enrollment of patients in clinical trials, our receipt of necessary regulatory approvals could be delayed or prevented.

Clinical trials of a new product candidate require the enrollment of a sufficient number of patients suffering from the disease or condition the product candidate is intended to treat and who meet other eligibility criteria. Rates of patient enrollment are affected by many factors, including the size of the potential patient population, the age and condition of the patients, the stage and severity of disease or condition, the nature and requirements of the protocol, the proximity of patients to clinical sites, the availability of effective treatments for the relevant disease or condition, the perceived risks, benefits and convenience of administration of the product candidate being studied, the patient referral practices of physicians, our efforts to facilitate timely enrollment in clinical trials, and the eligibility criteria for the clinical trial. Delays or difficulties in patient enrollment or difficulties retaining trial participants, including as a result of the availability of existing or other investigational treatments, can result in increased costs, longer development times or termination of a clinical trial.

In addition, our success may depend, in part, on our ability to identify patients who qualify for our clinical trials, or are likely to benefit from any product candidate that it may develop, which will require those potential patients to undergo a screening assay for the presence or absence of a particular genetic sequence or clinical trait. Genetically defined diseases generally, and especially those for which our current product candidates are targeted, may have relatively low prevalence. For example, we estimate there are approximately 2,000 patients diagnosed with UCD in the United States, and approximately 16,500 patients that may be diagnosed with PKU in the United States. If we, or any third parties that we engage to assist us, are unable to successfully identify patients with these diseases, or experience delays in doing so, then we may not realize the full commercial potential of any product candidate we develop.

We may face potential product liability claims, and, if successful claims are brought against us, we may incur substantial liability and costs. If the use or misuse of our product candidates harms patients, or is perceived to harm patients even when such harm is unrelated to our product candidates, our regulatory approvals, if any, could be revoked or otherwise negatively impacted and we could be subject to costly and damaging product liability claims. If we are unable to obtain adequate insurance or are required to pay for liabilities resulting from a claim excluded from, or beyond the limits of, our insurance coverage, such liability could adversely affect our financial condition.

The use or misuse of our product candidates in clinical trials and the sale of any products for which we may obtain marketing approval exposes us to the risk of potential product liability claims. Product liability claims might be brought against us by consumers, healthcare providers, pharmaceutical companies or others selling or otherwise coming into contact with our product candidates and approved products, if any. There is a risk that our product candidates may induce adverse events. If we cannot successfully defend against product liability claims, we could incur substantial liability and costs. Patients with the diseases targeted by our product candidates may already be in severe and advanced stages of disease and have both known and unknown significant preexisting and potentially life-threatening health risks. During the course of treatment, patients may suffer adverse events, including death, for reasons that may be related to our product candidates. Such events could subject us to costly litigation, require us to pay substantial amounts of money to injured patients, delay, negatively impact or end our opportunity to receive or maintain regulatory approval to market our products, or require us to suspend or abandon our commercialization efforts. Even in a circumstance in which an adverse event is unrelated to our product candidates, the investigation into the circumstance may be time-consuming or inconclusive. These investigations may delay our regulatory approval process or impact and limit the type of regulatory approvals our product candidates receive or maintain. As a result of these factors, a product liability claim, even if successfully defended, could have a material adverse effect on our business, financial condition or results of operations.

Although we have product liability insurance, which covers any clinical trial we may conduct in the United States, our insurance may be insufficient to reimburse us for any expenses or losses we may suffer. We will also likely be required to increase our product liability insurance coverage for the advanced clinical trials that we plan to initiate. If we obtain marketing approval for any of our product candidates, we will need to expand our insurance coverage to include the sale of commercial products. There is no way to know if we will be able to continue to obtain product liability coverage and obtain expanded coverage we may require, in sufficient amounts to protect us against losses due to liability, on acceptable terms, or at all. We may not have sufficient resources to pay for any liabilities resulting from a claim excluded from, or beyond the limits of, our insurance coverage. Where we have provided indemnities in favor of third parties under our agreements with them, there is also a risk that these third parties could incur liability and bring a claim under such indemnities. An individual may bring a product liability claim against us alleging that one of our product candidates or products causes, or is claimed to have caused, an injury or is found to be unsuitable for consumer use. Any such product liability claims may include allegations of defects in manufacturing, defects in design, a failure to warn of dangers inherent in the product, negligence, strict liability, and a breach of warranties. Claims could also be asserted under state consumer protection acts. Any product liability claim brought against us, with or without merit, could result in:

- withdrawal of clinical trial volunteers, investigators, patients or trial sites or limitations on approved indications;
- the inability to commercialize, or if commercialized, decreased demand for, our product candidates;
- if commercialized, product recalls, withdrawals of labeling, marketing or promotional restrictions or the need for product modification;
- initiation of investigations by regulators;
- loss of revenues;
- substantial costs of litigation, including monetary awards to patients or other claimants;
- liabilities that substantially exceed our product liability insurance, which we would then be required to pay ourselves;
- an increase in our product liability insurance rates or the inability to maintain insurance coverage in the future on acceptable terms, if at all;
- the diversion of management’s attention from our business; and
- damage to our reputation and the reputation of our products and our technology.

Product liability claims may subject us to the foregoing and other risks, which could have a material adverse effect on our business, financial condition or results of operations.

Risks Related to Regulatory Approval of Our Product Candidates and Other Legal Compliance Matters

We may seek breakthrough therapy designation for one or more of our product candidates, but we might not receive such designation, and even if we do, such designation may not lead to a faster development or regulatory review or approval process, and it does not increase the likelihood that our product candidates will receive marketing approval.

We may seek a breakthrough therapy designation from the FDA for some of our product candidates. A breakthrough therapy is defined as a drug or biological product that is intended, alone or in combination with one or more other drugs, to treat a serious or life-threatening disease or condition, and for which preliminary clinical evidence indicates that the drug or biological product may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints, such as substantial treatment effects observed early in clinical development. For drugs or biological products that have been designated as breakthrough therapies, interaction and communication between the FDA and the sponsor of the trial can help to identify the most efficient path for clinical development while minimizing the number of patients placed in ineffective control regimens. Drugs designated as breakthrough therapies by the FDA could also be eligible for accelerated approval.

Designation as a breakthrough therapy is within the discretion of the FDA. Accordingly, even if we believe one of our product candidates meets the criteria for designation as a breakthrough therapy, the FDA may disagree and instead determine not to make such designation. In any event, the receipt of a breakthrough therapy designation for a product candidate may not result in a faster development process, review or approval compared to drugs considered for approval under conventional FDA procedures and does not assure ultimate approval by the FDA. In addition, even if one or more of our product candidates qualify and are designated as breakthrough therapies, the FDA may later decide that the drugs or biological products no longer meet the conditions for designation and the designation may be rescinded.

We may seek Fast Track designation for one or more of our product candidates, but we might not receive such designation, and even if we do, such designation may not actually lead to a faster development or regulatory review or approval process.

If a product candidate is intended for the treatment of a serious condition and nonclinical or clinical data demonstrate the potential to address unmet medical need for the condition, a product sponsor may apply for FDA Fast Track designation. We were awarded Fast Track designation for SYNB1020 in June 2017. Fast Track designation does not ensure that we will receive marketing approval for the product candidate or that approval will be granted within any particular timeframe. We may not experience a faster development or regulatory review or approval process with Fast Track designation compared to conventional FDA procedures. In addition, the FDA may withdraw Fast Track designation if it believes that the designation is no longer supported by data from our clinical development program. Fast Track designation alone does not guarantee qualification for the FDA's priority review procedures.

Even if we obtain regulatory approval for a product candidate, we will remain subject to ongoing regulatory requirements.

If any of our product candidates are approved for marketing, we will be subject to ongoing regulatory requirements, including with respect to manufacturing, labeling, packaging, storage, advertising, promotion, sampling, record-keeping, conduct of post-marketing clinical trials, and submission of safety, efficacy and other post-approval information, including both federal and state requirements in the United States and requirements of comparable foreign regulatory authorities.

Manufacturers and manufacturers' facilities are required to continuously comply with FDA and comparable foreign regulatory authority requirements, including ensuring that quality control and manufacturing procedures conform to current Good Manufacturing Practices ("cGMP") regulations and corresponding foreign regulatory manufacturing requirements. As such, we and our contract manufacturers will be subject to continual review and inspections to assess compliance with cGMP and adherence to commitments made in any Biologic License Application ("BLA") or marketing authorization application.

Any regulatory approvals that we receive for our product candidates may be subject to limitations on the approved indicated uses for which the product candidate may be marketed or to the conditions of approval, or contain requirements for potentially costly post-marketing testing, including Phase 4 clinical trials, and surveillance to monitor the safety and efficacy of the product candidate. We will be required to report adverse reactions and production problems, if any, to the FDA and comparable foreign regulatory authorities. Any new legislation addressing drug safety issues could result in delays in product development or commercialization, or increased costs to assure compliance. If our original marketing approval for a product candidate was obtained through an accelerated approval pathway, we could be required to conduct a successful post-marketing clinical trial in order to confirm the clinical benefit for our products. An unsuccessful post-marketing clinical trial or failure to complete such a trial could result in the withdrawal of marketing approval.

If a regulatory agency discovers previously unknown problems with a product, such as adverse events of unanticipated severity or frequency, or problems with the facility where the product is manufactured, or disagrees with the promotion, marketing or labeling of a product, the regulatory agency may impose restrictions on that product or us, including requiring withdrawal of the product from the market. If we fail to comply with applicable regulatory requirements, a regulatory agency or enforcement authority may, among other things:

- issue warning letters;
- impose civil or criminal penalties;
- suspend or withdraw regulatory approval;
- suspend any of our ongoing clinical trials;
- refuse to approve pending applications or supplements to approved applications submitted by us;
- impose restrictions on our operations, including closing our contract manufacturers' facilities; or
- require a product recall.

Any government investigation of alleged violations of law would be expected to require us to expend significant time and resources in response and could generate adverse publicity. Any failure to comply with ongoing regulatory requirements may significantly and adversely affect our ability to develop and commercialize our products and our value and operating results would be adversely affected.

Healthcare legislative reform measures may have a material adverse effect on our, financial condition or results of operations.

In the United States, there have been and continue to be a number of legislative initiatives to contain healthcare costs. For example, in March 2010, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act (collectively, the "ACA"), was passed, which was intended to substantially change the way health care is financed by both governmental health programs and private insurers, and significantly impact the U.S. pharmaceutical industry. The ACA, among other things, introduced a new methodology by which rebates owed by manufacturers under the Medicaid Drug Rebate Program are calculated for drugs that are inhaled, infused, instilled, implanted, or injected, increases the minimum Medicaid rebates owed by manufacturers under the Medicaid Drug Rebate Program and extends the rebate program to individuals enrolled in Medicaid managed care organizations, establishes annual fees and taxes on manufacturers of specified branded prescription drugs, and promotes a new Medicare Part D coverage gap discount program.

In January 2017, Congress voted to adopt a budget resolution for fiscal year 2017 that authorizes the implementation of legislation that would repeal portions of the ACA. Although such budget resolution is not a law, it is widely viewed as the first step toward the passage of legislation that would repeal certain aspects of the ACA. Further, on January 20, 2017, President Trump signed an Executive Order directing federal agencies with authorities and responsibilities under the ACA to waive, defer, grant exemptions from, or delay the implementation of any provision of the ACA that would impose a fiscal or regulatory burden on states, individuals, healthcare providers, health insurers, or manufacturers of pharmaceuticals or medical devices. Congress also could consider subsequent legislation to replace elements of the Affordable Care Act that are repealed. With the new Presidential administration and Congress, there will likely be additional administrative or legislative changes, including modification, repeal, or replacement of all, or certain provisions of, the Affordable Care Act. However, it remains to be seen whether new legislation modifying the Affordable Care Act is enacted and, if so, precisely what the new legislation will provide, when it will be enacted and what impact it will have on the availability of healthcare and containing or lowering the cost of healthcare. The implications of a potential repeal and/or replacement of the Affordable Care Act, for our and our partners' business and financial condition, if any, are not yet clear.

It is anticipated that the ACA, as well as other healthcare reform measures that may be adopted in the future, may result in more rigorous coverage criteria and an additional downward pressure on the reimbursement our customers may receive for our products. Further, there have been judicial and Congressional challenges to certain aspects of the ACA, and it is expected there will be additional challenges and amendments to the ACA in the future, especially with the recent change in administration. Any reduction in reimbursement from Medicare and other government programs may result in a similar reduction in payments from private payors. The implementation of cost containment measures or other healthcare reforms may prevent us from being able to generate revenue, attain profitability or commercialize our products.

We may be subject, directly or indirectly, to federal and state healthcare fraud and abuse laws, false claims laws, and health information privacy and security laws. If we are unable to comply, or have not fully complied, with such laws, we could face substantial penalties.

If we obtain FDA approval for any of our product candidates and begin commercializing those products in the United States, our operations may be subject to various federal and state fraud and abuse laws, including, without limitation, the federal Anti-Kickback Statute, the federal False Claims Act, and physician sunshine laws and regulations. These laws may impact, among other things, our proposed sales, marketing, and education programs. In addition, we may be subject to patient privacy regulation by both the federal government and the states in which we conduct our business. The laws that may affect our ability to operate include:

- the federal Anti-Kickback Statute, which prohibits, among other things, persons from knowingly and willfully soliciting, receiving, offering or paying remuneration, directly or indirectly, to induce, or in return for, the purchase or recommendation of an item or service reimbursable under a federal healthcare program, such as the Medicare and Medicaid programs;
- federal civil and criminal false claims laws and civil monetary penalty laws, which prohibit, among other things, individuals or entities from knowingly presenting, or causing to be presented, claims for payment from Medicare, Medicaid, or other third-party payors that are false or fraudulent;
- the federal Health Insurance Portability and Accountability Act of 1996 (“HIPAA”), which created new federal criminal statutes that prohibit executing a scheme to defraud any healthcare benefit program and making false statements relating to healthcare matters;
- HIPAA, as amended by the Health Information Technology and Clinical Health Act, and its implementing regulations, which imposes specified requirements relating to the privacy, security, and transmission of individually identifiable health information;
- the federal physician sunshine requirements under the ACA require manufacturers of drugs, devices, biologics, and medical supplies to report annually to the U.S. Department of Health and Human Services information related to payments and other transfers of value to physicians, other healthcare providers, and teaching hospitals, and ownership and investment interests held by physicians and other healthcare providers and their immediate family members and applicable group purchasing organizations; and
- state law equivalents of each of the above federal laws, such as anti-kickback and false claims laws that may apply to items or services reimbursed by any third-party payor, including governmental and private payors, to comply with the pharmaceutical industry’s voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government, or otherwise restrict payments that may be made to healthcare providers and other potential referral sources; state laws that require drug manufacturers to report information related to payments and other transfers of value to physicians and other healthcare providers or marketing expenditures, and state laws governing the privacy and security of health information in specified circumstances, many of which differ from each other in significant ways and may not have the same effect, thus complicating compliance efforts.

Because of the breadth of these laws and the narrowness of the statutory exceptions and safe harbors available, it is possible that some of our business activities could be subject to challenge under one or more of such laws. In addition, recent health care reform legislation has strengthened these laws. For example, the ACA, among other things, amends the intent requirement of the federal anti-kickback and criminal healthcare fraud statutes. A person or entity no longer

needs to have actual knowledge of this statute or specific intent to violate it. Moreover, the ACA provides that the government may assert that a claim including items or services resulting from a violation of the federal anti-kickback statute constitutes a false or fraudulent claim for purposes of the False Claims Act.

If our operations are found to be in violation of any of the laws described above or any other governmental regulations that apply to us, we may be subject to penalties, including civil and criminal penalties, damages, fines, exclusion from participation in government health care programs, such as Medicare and Medicaid, imprisonment, and the curtailment or restructuring of our operations, any of which could adversely affect our ability to operate our business and our results of operations.

If we fail to comply with environmental, health and safety laws and regulations, we could become subject to fines or penalties or incur costs that could have a material adverse effect on our business, financial condition or results of operations.

Our research and development activities and our third-party manufacturers' and suppliers' activities involve the controlled storage, use, and disposal of hazardous materials, including the components of our product candidates and other hazardous compounds. We and our manufacturers and suppliers are subject to laws and regulations governing the use, manufacture, storage, handling, and disposal of these hazardous materials. In some cases, these hazardous materials and various wastes resulting from their use are stored at our and our manufacturers' facilities pending their use and disposal. We cannot eliminate the risk of contamination, which could cause an interruption of our research and development efforts, commercialization efforts and business operations and environmental damage resulting in costly clean-up and liabilities under applicable laws and regulations governing the use, storage, handling, and disposal of these materials and specified waste products. Although we believe that the safety procedures utilized by us and our third-party manufacturers for handling and disposing of these materials generally comply with the standards prescribed by these laws and regulations, we cannot guarantee that this is the case or eliminate the risk of accidental contamination or injury from these materials. In such an event, we may be held liable for any resulting damages and such liability could exceed our resources and state or federal or other applicable authorities may curtail our use of specified materials and/or interrupt our business operations. Furthermore, environmental laws and regulations are complex, change frequently, and have tended to become more stringent. We cannot predict the impact of such changes and cannot be certain of our future compliance. Given the nature of the research and development work conducted by us, we do not currently carry biological or hazardous waste insurance coverage.

Laws and regulations governing international operations may preclude us from developing, manufacturing and selling certain products outside of the United States and require us to develop, implement and maintain costly compliance programs.

To develop, manufacture and sell certain products outside the United States, we must dedicate resources to comply with numerous laws and regulations in each jurisdiction in which we operate. The Foreign Corrupt Practices Act ("FCPA"), prohibits any United States individual or business from paying, offering, authorizing payment or offering anything of value, directly or indirectly, to any foreign official, political party or candidate for the purpose of influencing any act or decision of the foreign entity in order to assist the individual or business in obtaining or retaining business. The FCPA also obligates companies whose securities are listed in the United States to comply with certain accounting provisions requiring the company to maintain books and records that accurately and fairly reflect all transactions of the corporation, including international subsidiaries, and to devise and maintain an adequate system of internal accounting controls for international operations.

Compliance with the FCPA is expensive and difficult, particularly in countries in which corruption is a recognized problem. In addition, the FCPA presents particular challenges in the pharmaceutical industry, because, in many countries, hospitals are operated by the government, and doctors and other hospital employees may be considered government employees or foreign officials. In other circumstances, certain payments to hospitals in connection with clinical trials and other work have been deemed to be improper payments to government officials and have led to FCPA enforcement actions.

Various laws, regulations and executive orders also restrict the use and dissemination outside of the United States, or the sharing with certain non-United States nationals, of information classified for national security purposes, as well as certain products and technical data relating to those products. These laws may preclude us from developing, manufacturing, or selling certain products and product candidates outside of the U.S., which could limit our growth potential and increase our development costs.

The failure to comply with laws governing international business practices may result in substantial civil and criminal penalties and suspension or debarment from government contracting. The SEC also may suspend or bar issuers from trading securities on U.S. exchanges for violations of the FCPA's accounting provisions and export control laws.

Our internal computer systems, or those of our collaborators or other contractors or consultants, may fail or suffer security breaches, which could result in a material disruption of our product development programs.

Our internal computer systems and those of our current and any future collaborators and other contractors or consultants are vulnerable to damage from computer viruses, unauthorized access, natural disasters, terrorism, war and telecommunication and electrical failures. While we have not experienced any such material system failure, accident or security breach to date, if such an event were to occur and cause interruptions in our operations, it could result in a material disruption of our development programs and our business operations, whether due to a loss of our trade secrets or other proprietary information or other similar disruptions. For example, the loss of preclinical or clinical trial data could result in delays in our regulatory approval efforts and significantly increase our costs to recover or reproduce the data. To the extent that any disruption or security breach were to result in a loss of, or damage to, our data or applications, or inappropriate disclosure of confidential or proprietary information, we could incur liability, our competitive position could be harmed and the further development and commercialization of our product candidates could be delayed.

Ethical, legal and social concerns about synthetic biology and genetic engineering could limit or prevent the use of our technologies and limit our revenues.

Our technologies involve the use of synthetic biology and genetic engineering. Public perception about the safety and environmental hazards of, and ethical concerns over, synthetic biology and genetic engineering could influence public acceptance of our technologies, product candidates and processes. If we and our collaborators are not able to overcome the ethical, legal and social concerns relating to synthetic biology and genetic engineering, our technologies, product candidates and processes may not be accepted. These concerns could result in increased expenses, regulatory scrutiny and increased regulation, trade restrictions on imports of Synthetic Biotic medicines, delays or other impediments to our programs or the public acceptance and commercialization of Synthetic Biotic medicines. Further, there is a risk that Synthetic Biotic medicines made using our technologies could result in adverse health effects or other adverse events, which could also lead to negative publicity. We design and produce product candidates with characteristics comparable or disadvantaged to those found in naturally occurring organisms or enzymes in a controlled laboratory; however, the release of such organisms into uncontrolled environments could have unintended consequences. Any adverse effect resulting from such a release could have a material adverse effect on our business, financial condition or results of operations and we may have exposure to liability for any resulting harm.

Risks Related to Our Intellectual Property

We may not be successful in obtaining or maintaining necessary rights to Synthetic Biotic targets, product candidates and processes for our development pipeline through acquisitions and in-licenses.

Presently, we have rights to certain intellectual property, through licenses from third parties and under patents and patent applications owned by us. The growth of our business will likely depend in part on our ability to obtain, maintain or enforce our and our licensors' intellectual property rights and also acquire or in-license additional proprietary rights. For example, our programs may involve additional product candidates or delivery systems that may require the use of additional proprietary rights held by third parties. Our ultimate product candidates may also require specific formulations to work effectively and efficiently. These formulations may be covered by intellectual property rights held by others. We may be unable to acquire or in-license any relevant third-party intellectual property rights that we identify as necessary or important to our business operations.

In addition, our product candidates may require specific formulations to work effectively and efficiently and these rights may be held by other third parties. We may be unable to develop, acquire or in-license compositions, methods of use, processes or other third-party intellectual property rights from third parties that we identify. The licensing and acquisition of third-party intellectual property rights is a competitive area, and a number of other companies may also be pursuing strategies to license or acquire third-party intellectual property rights that we may consider attractive. These companies could have a competitive advantage over us due to their size, cash resources and greater clinical development and commercialization capabilities.

For example, we have previously and may continue to collaborate with academic institutions to accelerate our preclinical research or development under written agreements with these institutions. Typically, these institutions provide an option to negotiate a license to any of the institution's rights in technology resulting from the collaboration. Regardless of such right of first negotiation for intellectual property, we may be unable to negotiate a license within the specified time frame or under terms that are acceptable to it. If we are unable to do so, the institution may offer the intellectual property rights to other parties, potentially blocking our ability to pursue our program.

In addition, companies that perceive us to be a competitor may be unwilling to assign or license rights to us. We also may be unable to license or acquire third-party intellectual property rights on terms that would allow us to make an appropriate return on our investment. If we are unable to successfully obtain rights to third-party intellectual property rights, our business, financial condition and prospects for growth could suffer.

We intend to rely on patent rights and the status of our product candidates, if approved, as biologics eligible for exclusivity under the Biologics Price Competition and Innovation Act (BPCIA). If Synlogic is unable to obtain or maintain exclusivity from the combination of these approaches, Synlogic may not be able to compete effectively in our markets.

We rely or will rely upon a combination of patents, trade secret protection, and confidentiality agreements to protect the intellectual property related to our technologies and product candidates. Our success depends in large part on our and our licensors' ability to obtain regulatory exclusivity and maintain patent and other intellectual property protection in the United States and in other countries with respect to our proprietary technology and products.

We have sought to protect our proprietary position by filing patent applications in the United States and abroad related to our product candidates that are important to our business. This process is expensive and time consuming, and we may not be able to file and prosecute all necessary or desirable patent applications at a reasonable cost or in a timely manner. It is also possible that we will fail to identify patentable aspects of our research and development output before it is too late to obtain patent protection.

The patent position of biotechnology and pharmaceutical companies generally is highly uncertain and involves complex legal and factual questions for which legal principles remain unsolved. The patent applications that we own or in-license may fail to result in issued patents with claims that cover our product candidates in the United States or in other foreign countries. There is no assurance that all potentially relevant prior art relating to our patents and patent applications has been found, which can invalidate a patent or prevent a patent from issuing from a pending patent application. Even if patents do successfully issue, and even if such patents cover our product candidates, third parties may challenge their validity, enforceability, or scope, which may result in such patents being narrowed, found unenforceable or invalidated. Furthermore, even if they are unchallenged, our patents and patent applications may not adequately protect our intellectual property, provide exclusivity for our product candidates, or prevent others from designing around our claims. Any of these outcomes could impair our ability to prevent competition from third parties, which may have an adverse impact on our business.

We, independently or together with our licensors, have filed several patent applications covering various aspects of our product candidates. We cannot offer any assurances about which, if any, patents will issue, the breadth of any such patent or whether any issued patents will be found invalid and unenforceable or will be threatened by third parties. Any successful opposition to these patents or any other patents owned by or licensed to us after patent issuance could deprive us of rights necessary for the successful commercialization of any product candidates that we may develop. Further, if we encounter delays in regulatory approvals, the period of time during which we could market a product candidate under patent protection could be reduced.

Even if we cannot obtain and maintain effective protection of exclusivity from our regulatory efforts and intellectual property rights, including patent protection, data exclusivity or orphan drug exclusivity, for our product candidates, we believe that our product candidates will be protected by exclusivity that prevents approval of a biosimilar in the United States for a period of twelve years from the time the product to which it claims similarity was first approved. However, The Biologics Price Competition and Innovation Act of 2009, Title VII, Subtitle A of the Patent Protection and Affordable Care Act, Pub.L.No.111-148, 124 Stat.119, Sections 7001-02 signed into law March 23, 2010, and codified in 42 U.S.C. §262

(the "BPCIA"), created an elaborate and complex patent dispute resolution mechanism for biosimilars that could prevent us from launching our product candidates in the United States or could substantially delay such launches. Current biosimilars litigation are addressing certain requirements of the BPCIA which is creating uncertainty over how certain terms of the BPCIA should be construed and this, presents uncertainty for both the biologics innovator and biosimilar party. The BPCIA mechanism required for biosimilar applicants may pose greater risk that patent infringement litigation will disrupt our activities and add increased expenses as well as divert management's attention. If a biosimilar version of one of our product candidates were approved in the United States, it could have a negative effect on our business.

We may not have sufficient patent term protections for our product candidates to effectively protect our business.

Patents have a limited term. In the United States, the statutory expiration of a patent is generally 20 years after it is filed. Although various extensions may be available, the life of a patent, and the protection it affords, is limited. Even if patents covering our product candidates are obtained, once the patent life has expired for a product candidate, we may be open to competition. In addition, upon issuance in the United States any patent term can be adjusted based on specified delays caused by the applicant(s) or the USPTO.

Patent term extensions under the Hatch-Waxman Act in the United States and under supplementary protection certificates in Europe may be available to extend the patent or data exclusivity terms of our product candidates. We will likely seek patent term extensions, and we cannot provide any assurances that any such patent term extensions will be obtained and, if so, for how long. As a result, we may not be able to maintain exclusivity for our product candidates for an extended period after regulatory approval, if any, which would negatively impact our business, financial condition, results of operations and prospects. If we do not have sufficient patent terms or regulatory exclusivity to protect our product candidates, our business and results of operations will be adversely affected.

Changes in U.S. patent law could diminish the value of patents in general, thereby impairing our ability to protect our products, and recent patent reform legislation could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents.

As is the case with other biotechnology companies, our success is heavily dependent on patents. Obtaining and enforcing patents in the biotechnology industry involves both technological and legal complexity, and is therefore costly, time-consuming and inherently uncertain. In addition, the United States has recently enacted and is currently implementing wide-ranging patent reform legislation. Recent U.S. Supreme Court rulings have narrowed the scope of patent protection available in specified circumstances and weakened the rights of patent owners in specified situations. In addition to increasing uncertainty with regard to our ability to obtain patents in the future, this combination of events has created uncertainty with respect to the value of patents, once obtained. Depending on decisions by the U.S. Congress, the federal courts, and the USPTO, the laws and regulations governing patents could change in unpredictable ways that would weaken our ability to obtain new patents or to enforce our existing patents and patents that we might obtain in the future.

If we are unable to maintain effective proprietary rights for our product candidates or any future product candidates, we may not be able to compete effectively in our proposed markets.

In addition to the protection afforded by patents, we rely on trade secret protection and confidentiality agreements to protect proprietary know-how that is not patentable or that we elect not to patent. We also utilize processes for which patents are difficult to enforce. In addition, other elements of our products, and many elements of our product candidate discovery and development processes involve proprietary know-how, information or technology that is not covered by patents. Trade secrets may be difficult to protect. We seek to protect our proprietary technology and processes, in part, by entering into confidentiality agreements with our employees, consultants, collaborators, advisors, independent contractors or other third parties. We also seek to preserve the integrity and confidentiality of our data and trade secrets, including by maintaining physical and electronic security of our premises and our information technology systems. While we have confidence in these individuals, organizations and systems, agreements or security measures may be breached, and we may not have adequate remedies for any breach. In addition, competitors may otherwise gain access to our trade secrets or independently develop substantially equivalent information and techniques. Furthermore, the laws of some foreign countries do not protect proprietary rights to the same extent or in the same manner as the laws of the United States. As a result, we may encounter significant problems in protecting and defending our intellectual property both in the United States and abroad. If we are unable to prevent unauthorized material disclosure of our intellectual property to third parties, or misappropriation of our intellectual property by third parties, we may not be able to establish or maintain a competitive advantage in our market, which could materially adversely affect our business, operating results, and financial condition.

Although Synlogic expects all of our employees and consultants to assign their inventions to us, and all of our employees, consultants, collaborators, advisors, independent contractors and any third parties who have access to our proprietary know-how, information, or technology to enter into confidentiality agreements, we cannot provide any assurances that all such agreements have been duly executed or that our trade secrets and other confidential proprietary information will not be disclosed or that competitors will not otherwise gain access to our trade secrets or independently develop substantially equivalent information and techniques. Misappropriation or unauthorized disclosure of our trade secrets could impair our competitive position and may have a material adverse effect on our business, financial condition or results of operations. Additionally, if the steps taken to maintain our trade secrets are deemed inadequate, we may have insufficient recourse against third parties for misappropriating the trade secret.

Third-party claims of intellectual property infringement may prevent or delay our development and commercialization efforts.

Our commercial success depends in part on our ability to develop, manufacture, market and sell our product candidates and use our proprietary technology without infringing the patent rights of third parties. Numerous third-party U.S. and non-U.S. issued patents and pending applications exist in the area of Synthetic Biotics. We are aware of U.S. and foreign patents and pending patent applications owned by third parties that cover similar therapeutic uses as the product candidates we are developing. We are currently monitoring these patents and patent applications. We may in the future pursue available proceedings in the U.S. and foreign patent offices to challenge the validity of these patents and patent applications. In addition, or alternatively, we may consider whether to seek to negotiate a license of rights to technology covered by one or more of such patents and patent applications. If any patents or patent applications cover our product candidates or technologies, we may not be free to manufacture or market our product candidates as planned, absent such a license, which may not be available to us on commercially reasonable terms, or at all.

It is also possible that we have failed to identify relevant third-party patents or applications. For example, applications filed before November 29, 2000 and applications filed after that date that will not be filed outside the United States remain confidential until patents issue. Moreover, it is difficult for industry participants, including us, to identify all third-party patent rights that may be relevant to our product candidates and technologies because patent searching is imperfect due to differences in terminology among patents, incomplete databases and the difficulty in assessing the meaning of patent claims. We may fail to identify relevant patents or patent applications or may identify pending patent applications of potential interest but incorrectly predict the likelihood that such patents may issue with claims of relevance to our technology. In addition, we may be unaware of one or more issued patents that would be infringed by the manufacture, sale or use of a current or future product candidate, or we may incorrectly conclude that a third-party patent is invalid, unenforceable or not infringed by our activities. Additionally, pending patent applications that have been published can, subject to specified limitations, be later amended in a manner that could cover our technologies, our product candidates or the use of our product candidates.

There have been many lawsuits and other proceedings filed by third parties involving patent and other intellectual property rights in the biotechnology and pharmaceutical industries, including patent infringement lawsuits, interferences, oppositions, and reexamination, post-grant review and equivalent proceedings before the USPTO and corresponding foreign patent offices. Numerous U.S. and foreign issued patents and pending patent applications, which are owned by third parties, exist in the fields in which we are developing product candidates. As the biotechnology and pharmaceutical industries expand and more patents are issued, the risk increases that our product candidates may be subject to claims of infringement of the patent rights of third parties.

Parties making claims against us may obtain injunctive or other equitable relief, which could effectively block our ability to further develop and commercialize one or more of our product candidates. Defense of these claims, regardless of their merit, would involve substantial litigation expense and would be a substantial diversion of employee resources from our business. In the event of a successful claim of infringement against us, we may have to pay substantial damages, including treble damages and attorneys' fees for willful infringement, pay royalties, redesign our infringing products or obtain one or more licenses from third parties, which may be impossible or require substantial time and monetary expenditure.

We depend, in part, on our licensors to file, prosecute, maintain, defend and enforce patents and patent applications that are material to our business.

While we normally seek and gain the right to fully prosecute the patent applications relating to our product candidates, there may be times when the patent applications enabling our product candidates are controlled by our licensors. If any of our existing or future licensors fail to appropriately and broadly prosecute and maintain patent protection for patents covering any of our product candidates, our ability to develop and commercialize those product candidates may be adversely affected and we may not be able to prevent competitors from making, using, importing, and selling competing products. In addition, even where we now have the right to control patent prosecution of patents and patent applications we have licensed from third parties, we may still be adversely affected or prejudiced by actions or inactions of our licensors in effect from actions prior to us assuming control over patent prosecution.

If we fail to comply with obligations in the agreements under which we license intellectual property and other rights from third parties or otherwise experience disruptions to our business relationships with our licensors, we could lose license rights that are important to our business.

We are a party to certain intellectual property license agreements that are important to our business and expect to enter into additional license agreements in the future. Our existing agreements impose, and we expect that future license agreements will impose, certain obligations, including the payment of milestones and royalties based on revenues from sales of our products utilizing the technologies licensed from our licensors, and such obligations could adversely affect the overall profitability for us of any products that we may seek to commercialize. In addition, we will need to outsource and rely on third parties for many aspects of the clinical development, sales and marketing of our product candidates covered under our license agreements. Delay or failure by these third parties could adversely affect the continuation of our license agreements with our third-party licensors. If we fail to comply with our obligations under these agreements, or we are subject to a bankruptcy, these agreements may be subject to termination by the licensor which could have a material adverse effect on our business.

We may be involved in lawsuits to protect or enforce our patents or the patents of our licensors, which could be expensive, time consuming, and unsuccessful.

Competitors may infringe our patents or the patents of our licensors. To cease such infringement or unauthorized use, we or one of our licensing partners may be required to file patent infringement claims against a third party to enforce one of our patents which can be expensive, time-consuming and unpredictable. In addition, in an infringement proceeding or a declaratory judgment action against us, a court may decide that one or more of our patents is not valid or is unenforceable, or may refuse to stop the other party from using the technology at issue on the grounds that our patents do not cover the technology in question. An adverse result in any litigation or defense proceeding could put one or more of our patents at risk of being invalidated, held unenforceable or interpreted narrowly and could put our patent applications at risk of not issuing. Defense of these claims, regardless of their merit, would involve substantial litigation expense and would be a substantial diversion of employee resources from our business.

If we or one of our licensing partners were to initiate legal proceedings against a third party to enforce a patent covering one of our product candidates, the defendant could counterclaim that the patent covering our product candidate is invalid and/or unenforceable. In patent litigation in the United States, defendant counterclaims alleging invalidity and/or unenforceability are commonplace, and there are numerous grounds upon which a third party can assert invalidity or unenforceability of a patent. Grounds for a validity challenge could be an alleged failure to meet any of several statutory requirements, including lack of novelty, obviousness, written description, clarity or non-enablement. Grounds for an unenforceability assertion could be an allegation that someone connected with prosecution of the patent withheld relevant information from the USPTO, or made a misleading statement, during prosecution. Third parties may also raise similar claims before administrative bodies in the United States or other jurisdictions, even outside the context of litigation. Such mechanisms include re-examination, inter partes review, post-grant review and equivalent proceedings in foreign jurisdictions, such as opposition or derivation proceedings. Such proceedings could result in revocation or amendment to our patents in such a way that they no longer cover and protect our product candidates. The outcome following legal assertions of invalidity and unenforceability is unpredictable. With respect to the validity of our patents, for example, we cannot be certain that there is no invalidating prior art of which we, our patent counsel, and the patent examiner were unaware during prosecution. If a defendant were to prevail on a legal assertion of invalidity, unpatentability and/or unenforceability, we may lose at least part, and perhaps all, of the patent protection on our product candidates. Such a loss of patent protection could have a material adverse impact on our business.

Interference or derivation proceedings provoked by third parties or brought by us or declared by the USPTO may be necessary to determine the priority of inventions or correct inventorship with respect to our patents or patent applications or those of our licensors. An unfavorable outcome could result in a loss of our current patent rights and could require us to cease using the related technology or to attempt to license rights to us from the prevailing party. Our business could be harmed if the prevailing party does not offer us a license on commercially reasonable terms. Our defense of litigation, derivation or interference proceedings may result in a decision adverse to our interests and, even if successful, may result in substantial costs and distract our management and other employees. In addition, we may be unable to raise the funds necessary to conduct our clinical trials, continue our research programs, license necessary technology from third parties, or enter into development partnerships that would help us bring our product candidates to market.

Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation. There could also be public announcements of the results of hearings, motions, or other interim proceedings or developments. Any disclosure of confidential information could adversely affect our business. If securities analysts or investors perceive these results to be negative, it could have a substantial adverse effect on the price of our common stock.

We may be subject to claims challenging the inventorship of our patents and other intellectual property.

We may in the future be subject to claims that former employees, consultants, collaborators, advisors, independent contractors or other third parties have an interest in our patents or other intellectual property as an inventor or co-inventor or other claims challenging the inventorship of our patents or ownership of our intellectual property (including patents and intellectual property that we in-license). Therefore, our rights to these patents may not be exclusive and third parties, including competitors, may have access to intellectual property that is important to our business. In addition, co-owners from whom we do not yet have a license or assignment may raise claims surrounding inventorship or ownership of patents that ultimately issue from this patent family, potentially resulting in issued patents to which we would not have rights under our existing license agreements. Further, in jurisdictions outside the United States, a license may not be enforceable unless all the owners of the intellectual property agree or consent to the license. In addition, we may have inventorship disputes arising from conflicting obligations of consultants or others who are involved in developing our product candidates. Litigation may be necessary to defend against these and other claims challenging inventorship of our patents. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights, such as exclusive ownership of, or right to use, valuable intellectual property. Such an outcome could have a material adverse effect on our business. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to management and other employees.

We may be subject to claims that our employees, consultants, collaborators, advisors, independent contractors or other third parties have wrongfully used or disclosed confidential information of third parties or that our employees have wrongfully used or disclosed alleged trade secrets of their former employers.

We have received confidential and proprietary information from third parties. In addition, we employ individuals who were previously employed at universities, academic research institutions and at other biotechnology or pharmaceutical companies, including our competitors or potential competitors. Although we have written agreements with and makes every effort to ensure that our employees, consultants, collaborators, advisors, independent contractors or other third parties do not use the proprietary information or intellectual property rights of others in their work for us, we may in the future be subject to claims that our employees, consultants, collaborators, advisors, independent contractors or other third parties have inadvertently or intentionally used or disclosed confidential information of these third parties. Litigation may be necessary to defend against these claims. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel, which could adversely impact our business. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to management and other employees.

We may not be able to protect our intellectual property rights throughout the world.

We have limited intellectual property rights outside the United States. Filing, prosecuting, and defending patents on product candidates in all countries throughout the world would be prohibitively expensive, and intellectual property rights in some countries outside the United States can have a different scope and strength and be less extensive than those in

the United States. In addition, the laws of some foreign countries do not protect intellectual property rights to the same extent as federal and state laws in the United States. Consequently, we may not be able to prevent third parties (including competitors) from practicing our inventions in all countries outside the United States, or from selling or importing products made using our inventions in and into the United States or other jurisdictions. Competitors may use our technologies in jurisdictions where we have not obtained patent protection to develop their own products and, further, may export otherwise infringing products to territories where we have patent protection, but where enforcement rights are not as strong as those in the United States. These products may compete with our products and our patents or other intellectual property rights may not be effective or sufficient to prevent them from competing.

Many companies have encountered significant problems in protecting and defending intellectual property rights in foreign jurisdictions. The legal systems of some countries, particularly some developing countries, do not favor the enforcement of patents, trade secrets, and other intellectual property protection, particularly those relating to biopharmaceutical products, which could make it difficult in those jurisdictions for us to stop the infringement or misappropriation of our patents or other intellectual property rights, or the marketing of competing products in violation of our proprietary rights. Proceedings to enforce our patents and other intellectual property rights in foreign jurisdictions, whether or not successful, could result in substantial costs and divert our efforts and attention from other aspects of our business. Furthermore, such proceedings could put our patents at risk of being invalidated, held unenforceable or interpreted narrowly and could put our patent applications at risk of not issuing and could provoke third parties to assert claims of infringement or misappropriation against us. We may not prevail in any lawsuits that we initiate and the damages or other remedies awarded, if any, may not be commercially meaningful. Accordingly, our efforts to enforce our intellectual property rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we develop or license.

If our trademarks and trade names are not adequately protected, we may not be able to build name recognition in our markets of interest and our business may be adversely affected.

We have filed for trademark registration of certain marks relating to our current branding. If our trademarks and trade names are not adequately protected, we may not be able to build name recognition in our markets of interest and our business may be adversely affected. Our unregistered trademarks or trade names may be challenged, infringed, circumvented or declared generic or determined to be infringing on other marks. We may not be able to protect our rights to these trademarks and trade names, which we need to build name recognition among potential partners or customers in our markets of interest. At times, competitors may adopt trade names or trademarks similar to ours, thereby impeding our ability to build brand identity and possibly leading to market confusion. In addition, there could be potential trade name or trademark infringement claims brought by owners of other registered trademarks or trademarks that incorporate variations of our unregistered trademarks or trade names. Over the long term, if we are unable to successfully register our trademarks and trade names and establish name recognition based on our trademarks and trade names, then we may not be able to compete effectively and our business may be adversely affected. Our efforts to enforce or protect our proprietary rights related to trademarks, trade secrets, domain names, copyrights or other intellectual property may be ineffective and could result in substantial costs and diversion of resources and could adversely impact our financial condition or results of operations.

Risks Related to Our Reliance on Third Parties

We rely, and expect to continue to rely, on third parties to conduct some aspects of our product formulation, research, preclinical, and clinical studies, and those third parties may not perform satisfactorily, including by failing to meet deadlines for the completion of such formulation, research or testing.

We do not independently conduct all aspects of our drug discovery activities, compound formulation research or preclinical studies of product candidates. We currently rely, and expect to continue to rely, on third parties to conduct some aspects of our research and development and preclinical studies. Any of these third parties may terminate their engagements with us at any time. If we need to enter into alternative arrangements, it would delay our product development activities. Our reliance on these third parties for research and development activities reduces our control over these activities but does not relieve us of our responsibilities. For example, for product candidates that we develop and commercialize on our own, we will remain responsible for ensuring that each of our studies that support our clinical trial applications and our clinical trials are conducted in accordance with the study plan and protocols for the trial. If these third parties do not successfully carry out their contractual duties, meet expected deadlines or conduct our studies in accordance with regulatory requirements or our stated study plans and protocols, we will not be able to complete, or may

be delayed in completing, the necessary preclinical studies to enable us or our strategic alliance partners to select viable product candidates for clinical trial application submissions and will not be able to, or may be delayed in our efforts to, successfully develop and commercialize such product candidates.

We rely on third-party supply and manufacturing partners for drug supplies for our research and development, preclinical activities, and clinical activities, and may do the same for any commercial supplies of our product candidates.

We rely on third-party supply and manufacturing partners to supply the materials and components for, and manufacture, a portion of our research and development and preclinical study drug supplies and may do the same for any clinical trial drug supplies. We have not yet manufactured or formulated any product candidate on a commercial scale and may not be able to do so for any of our product candidates. We will work to develop and optimize our manufacturing process, and we cannot be sure that the process will result in therapies that are safe, potent or effective.

We do not own manufacturing facilities or supply sources for such components and materials, but may develop these capabilities in the future. There can be no assurance that our supply of research and development, preclinical and clinical development drugs and other materials will not be limited, interrupted, restricted in certain geographic regions or of satisfactory quality or continue to be available at acceptable prices. In particular, any replacement of any product formulation manufacturer we may engage could require significant effort and expertise because there may be a limited number of qualified replacements.

The manufacturing process for a product candidate is subject to FDA and foreign regulatory authority review. Suppliers and manufacturers must meet applicable manufacturing requirements and undergo rigorous facility and process validation tests required by regulatory authorities in order to comply with regulatory standards, such as cGMP regulations. In the event that any of our suppliers or manufacturers fails to comply with such requirements or to perform our obligations to us in relation to quality, timing or otherwise, or if our supply of components or other materials becomes limited or interrupted for other reasons, we may be forced to manufacture the materials ourselves, for which we currently do not have the capabilities or resources, or enter into an agreement with another third party, which we may not be able to do on reasonable terms, if at all. In some cases, the technical skills or technology required to manufacture our product candidates may be unique or proprietary to the original manufacturer and we may have difficulty, or there may be contractual restrictions prohibiting us from transferring such skills or technology to another third party and a feasible alternative may not exist. These factors would increase our reliance on such manufacturer or require us to obtain a license from such manufacturer in order to have another third party manufacture our product candidates. If we are required to change manufacturers for any reason, we will be required to verify that the new manufacturer maintains facilities and procedures that comply with quality standards and with all applicable regulations and guidelines. The delays associated with the verification of a new manufacturer could negatively affect our ability to develop product candidates in a timely manner or within budget.

We may rely on third party manufacturers if we receive regulatory approval for any product candidate. To the extent that we have existing, or enter into future, manufacturing arrangements with third parties, we will depend on these third parties to perform their obligations in a timely manner consistent with contractual and regulatory requirements, including those related to quality control and assurance. If we are unable to obtain or maintain third-party manufacturing for product candidates, or to do so on commercially reasonable terms, we may not be able to develop and commercialize our product candidates successfully. Our or a third party's failure to execute on our manufacturing requirements could adversely affect our business in a number of ways, including:

- an inability to initiate or continue clinical trials of product candidates under development;
- delay in submitting regulatory applications, or receiving regulatory approvals, for product candidates;
- loss of the cooperation of a collaborator;
- subjecting our product candidates to additional inspections by regulatory authorities;
- requirements to cease distribution or to recall batches of our product candidates; and
- in the event of approval to market and commercialize a product candidate, an inability to meet commercial demands for our products.

We enter into various contracts in the normal course of our business in which we indemnify the other party to the contract. In the event we have to perform under these indemnification provisions, it could have a material adverse effect on our business, financial condition and results of operations.

In the normal course of business, we periodically enter into academic, commercial, service, collaboration, licensing, consulting and other agreements that contain indemnification provisions. With respect to our academic and other research agreements, we typically indemnify the institution and related parties from losses arising from claims relating to the products, processes or services made, used, sold or performed pursuant to the agreements for which we have secured licenses, and from claims arising from our or our sublicensees' exercise of rights under the agreement. With respect to our collaboration agreements, we indemnify our collaborators from any third-party product liability claims that could result from the production, use or consumption of the product, as well as for alleged infringements of any patent or other intellectual property right by a third party. With respect to consulting agreements, we indemnify consultants from claims arising from the good faith performance of their services.

Should our obligation under an indemnification provision exceed applicable insurance coverage or should we be denied insurance coverage, our business, financial condition and results of operations could be adversely affected. Similarly, if we are relying on a collaborator to indemnify us and the collaborator is denied insurance coverage or the indemnification obligation exceeds the applicable insurance coverage, and if the collaborator does not have other assets available to indemnify us, our business, financial condition and results of operations could be adversely affected.

To the extent we are able to enter into collaborative arrangements or strategic alliances, we may be exposed to risks related to those collaborations and alliances.

We are currently party to an agreement with AbbVie. Biotechnology companies sometimes become dependent upon collaborative arrangements or strategic alliances to complete the development and commercialization of product candidates. If we elect to enter into collaborative arrangements or strategic alliances, these arrangements may place the development of our product candidates outside our control, may require us to relinquish important rights or may otherwise be on terms unfavorable to us.

Dependence on collaborative arrangements or strategic alliances would subject us to a number of risks, including the risk that:

- we may not be able to control the amount and timing of resources that our collaborators may devote to the relevant product candidates;
- our collaborators may experience financial difficulties;
- we may be required to relinquish important rights, such as marketing and distribution rights;
- business combinations or significant changes in a collaborator's business strategy may also adversely affect a collaborator's willingness or ability to complete our obligations under any arrangement;
- a collaborator could independently move forward with a competing drug candidate developed either independently or in collaboration with others, including our competitors; and
- collaborative arrangements are often terminated or allowed to expire, which would delay the development and may increase the cost of developing our drug candidates.

We may attempt to form collaborations in the future with respect to our product candidates, but we may not be able to do so, which may cause us to alter our development and commercialization plans.

We may attempt to form strategic collaborations, create joint ventures or enter into licensing arrangements with third parties with respect to our programs or platform that we believe will complement or augment our existing business. We may face significant competition in seeking appropriate strategic collaborators, and the negotiation process to secure appropriate terms is time consuming and complex. We may not be successful in our efforts to establish such a strategic collaboration for any product candidates and programs on terms that are acceptable to us, or at all. This may be because our product candidates and programs may be deemed to be at too early of a stage of development for collaborative effort, our research and development pipeline may be viewed as insufficient, the competitive or intellectual property landscape may be viewed as too intense or risky, and/or third parties may not view our product candidates and programs as having sufficient potential for commercialization, including the likelihood of an adequate safety and efficacy profile.

Any delays in identifying suitable collaborators and entering into agreements to develop and/or commercialize our product candidates could delay the development or commercialization of our product candidates, which may reduce their competitiveness even if they reach the market. Absent a strategic collaborator, we would need to undertake development and/or commercialization activities at our own expense. If we elect to fund and undertake development and/or commercialization activities on our own, we may need to obtain additional expertise and additional capital, which may not be available to us on acceptable terms or at all. If we are unable to do so, we may not be able to develop our product candidates or bring them to market and our business may be materially and adversely affected.

If we commit certain material breaches under our agreement with the Gates Foundation, and fail to cure them, the Gates Foundation may exercise a right to obtain a license to certain of our intellectual property or require us to redeem shares of our Capital Stock held by the Gates Foundation and our affiliates.

In September 2014, we entered into a letter agreement with the Bill & Melinda Gates Foundation (the "Gates Foundation"). In connection with the agreement, the Gates Foundation purchased $1.0 million of Series A-1 preferred stock, $1.4 million of Series A-2 preferred stock and $2.6 million of Class A-3 preferred units, and we committed to use a portion of the investment by the Gates Foundation to generally develop our Synthetic Biotic platform for potential use in neglected diseases prioritized by the Gates Foundation. In the event the Gates Foundation terminates the agreement for certain specified uncured material breaches by us, we will be obligated, among other remedies, to redeem the securities purchased by the Gates Foundation or to facilitate the purchase of such securities by a third party (in certain circumstances, We may instead satisfy such obligation by registering the resale of the securities into the public markets or through the ability of the Gates Foundation to resell the securities without volume limitations in reliance on Rule 144 under the Securities Act), and/or the Gates Foundation may exercise its right to obtain a non-exclusive license to certain of our intellectual property for use in certain prioritized diseases in developing countries. Additionally, in the six months following such sale or redemption, if we engage in certain specified corporate transactions that would value the sold or redeemed shares at more than 200% of the valuation used for the sale or redemption, we will be required to compensate the Gates Foundation for the difference between what the Gates Foundation would have received and what it actually received under the sale or redemption. If we instead elect to register the resale of the securities into the public markets or the Gates Foundation resells the securities in reliance on Rule 144, we will be required to compensate the Gates Foundation for the difference between what the Gates Foundation initially invested and what it actually received under such resale if there is any shortfall. If we are required to redeem such shares or to compensate the Gates Foundation following a specified corporate transaction or a resale, our financial condition could be materially and adversely affected. If the Gates Foundation exercises its right to obtain a non-exclusive license and develops and commercializes product candidates and products that we are also developing and commercializing, such exercise could have an adverse impact on our market position.

Risks Related to Commercialization of Our Product Candidates

If any of our product candidates are approved for marketing and commercialization and we are unable to develop sales, marketing and distribution capabilities on our own or enter into agreements with third parties to perform these functions on acceptable terms, we will be unable to successfully commercialize any such future products.

We currently have no sales, marketing or distribution capabilities or experience. If any of our product candidates is approved for marketing and commercialization, we will need to develop internal sales, marketing and distribution capabilities to commercialize such products, which would be expensive and time-consuming, or enter into collaborations with third parties to perform these services. If we decide to market our products directly, we will need to commit significant financial and managerial resources to develop a marketing and sales force with technical expertise and supporting distribution, administration and compliance capabilities. If we rely on third parties with such capabilities to market our products or decide to co-promote products with collaborators, we will need to establish and maintain marketing and distribution arrangements with third parties, and there can be no assurance that we will be able to enter into such arrangements on acceptable terms or at all. In entering into third-party marketing or distribution arrangements, any revenue we receive will depend upon the efforts of third parties and there can be no assurance that such third parties will establish adequate sales and distribution capabilities or be successful in gaining market acceptance of any approved product. If we are not successful in commercializing any product approved for marketing and commercialization in the future, either on our own or through third parties, our business, financial condition, results of operations and prospects may be adversely affected.

If the market opportunities for our product candidates are smaller than we believe they are, we may not meet our revenue expectations and, assuming approval of a product candidate, our business may suffer. Because the patient populations in the market for our product candidates may be small, we must be able to successfully identify patients and acquire a significant market share to achieve profitability and growth.

Given the small number of patients who have the diseases that we are targeting, our eligible patient population and pricing estimates may differ significantly from the actual market addressable by our product candidates. Our projections of both the number of people who have applicable diseases, as well as the subset of people with these diseases who have the potential to benefit from treatment with our product candidates, are based on our beliefs and estimates. These estimates have been derived from a variety of sources, including scientific literature, patient foundations, or market research, and may prove to be incorrect. Further, new studies may change the estimated incidence or prevalence of these diseases. The number of patients may turn out to be lower than expected. The potentially addressable patient population for each of our product candidates may be limited or may not be amenable to treatment with our product candidates, and new patients may become increasingly difficult to identify or gain access to, which would adversely affect our business, financial condition, results of operations and prospects.

We face substantial competition and our competitors may discover, develop or commercialize products faster or more successfully than us.

The development and commercialization of new products is highly competitive. We face competition from major pharmaceutical companies, specialty pharmaceutical companies, biotechnology companies, universities and other research institutions worldwide with respect to our product candidates that we may seek to develop or commercialize in the future. For example, Horizon Pharma plc, Dimension Therapeutics, Inc. (currently in definitive agreement for acquisition by Ultragenyx Pharmaceutical Inc.), Aeglea BioTherapeutics, Inc., Arcturus Therapeutics Inc., Castle Creek Pharma LLC, PhaseRx, Inc., Translate Bio (formerly Rana Therapeutics) and Selecta Biosciences, Inc. have developed or are developing product candidates for the treatment of UCD; Valeant Pharmaceuticals International, Inc., Ocera Therapeutics, Inc., Umecrine Cognition AB, Salix Pharmaceuticals, Ltd, as well as other preclinical and discovery stage companies have developed or are each developing product candidates for the treatment of HE; and BioMarin, Inc., MipSalus ApS, Dimension Therapeutics, Inc. and Synthetic Biologics, Inc. have developed or are developing product candidates for the treatment of PKU. Our competitors may succeed in developing, acquiring or licensing technologies and products that are more effective or less costly than the product candidates that we are currently developing or that we may develop, which could render our product candidates obsolete and noncompetitive.

In addition to the competition we face from alternative therapies for the diseases we intend to target with our product candidates, we are also aware of several companies that are also working specifically to develop engineered bacteria as cellular drug therapies, such as Intrexon Corp. Further there are several companies working to develop other similar products. Many of our competitors have substantially greater financial, technical and other resources, such as larger research and development staff and experienced marketing and manufacturing organizations. Third-party payors, including governmental and private insurers, may also encourage the use of generic products.

If our competitors obtain marketing approval from the FDA or comparable foreign regulatory authorities for their product candidates more rapidly than us, it could result in our competitors establishing a strong market position before we are able to enter the market.

Many of our competitors have materially greater name recognition and financial, manufacturing, marketing, research and drug development resources than we do. Additional mergers and acquisitions in the biotechnology and pharmaceutical industries may result in even more resources being concentrated in our competitors. Large pharmaceutical companies in particular have extensive expertise in preclinical and clinical testing and in obtaining regulatory approvals for drugs. In addition, academic institutions, government agencies, and other public and private organizations conducting research may seek patent protection with respect to potentially competitive products or technologies. These organizations may also establish exclusive collaborative or licensing relationships with our competitors. Failure of our product candidates to effectively compete against established treatment options or in the future with new products currently in development would harm our business, financial condition, results of operations and prospects.

The commercial success of any of our current or future product candidates will depend upon the degree of market acceptance by physicians, patients, third-party payors, and others in the medical community.

Even with approvals from the FDA and comparable foreign regulatory authorities, the commercial success of our products will depend in part on the health care providers, patients, and third-party payors accepting our product candidates as medically useful, cost-effective, and safe. Any product that we bring to the market may not gain market acceptance by physicians, patients and third-party payors. The degree of market acceptance of any of our products will depend on a number of factors, including but not limited to:

- the efficacy of the product as demonstrated in clinical trials and potential advantages over competing treatments;
- the safety and side effect profile of the product as demonstrated in clinical trials and potential advantages over competing treatments;
- the prevalence and severity of the disease targeted;
- the clinical indications for which approval is granted, including any limitations or warnings contained in a product's approved labeling;
- the convenience and ease of administration;
- the cost of treatment;
- the willingness of the patients and physicians to accept products engineered from bacteria and these therapies;
- the perceived ratio of risk and benefit of these therapies by physicians, patients, and payers, and the willingness of physicians to recommend these therapies to patients based on such risks and benefits;
- the marketing, sales and distribution support for the product;
- the publicity concerning the products or competing products and treatments; and
- the pricing and availability of third-party insurance coverage and reimbursement.

Even if a product displays a favorable efficacy and safety profile upon approval, market acceptance of the product remains uncertain. Efforts to educate the medical community and third-party payors on the benefits of the products may require significant investment and resources and may never be successful. If our products fail to achieve an adequate level of acceptance by physicians, patients, third-party payors, and other health care providers, we will not be able to generate sufficient revenue to become or remain profitable.

We may not be successful in any efforts to identify, license, discover, develop, or commercialize additional product candidates.

Although a substantial amount of our effort will focus on the clinical testing, potential approval, and commercialization of our existing product candidates, the success of our business is also expected to depend in part upon our ability to identify, license, discover, develop, or commercialize additional product candidates. Research programs to identify new product candidates require substantial technical, financial, and human resources. We may focus our efforts and resources on potential programs or product candidates that ultimately prove to be unsuccessful. Our research programs or licensing efforts may fail to yield additional product candidates for clinical development and commercialization for a number of reasons, including but not limited to the following:

- our research or business development methodology or search criteria and process may be unsuccessful in identifying potential product candidates;
- we may not be able or willing to assemble sufficient resources to acquire or discover additional product candidates;
- our product candidates may not succeed in preclinical or clinical testing;
- our potential product candidates may be shown to have harmful side effects or may have other characteristics that may make the products unmarketable or unlikely to receive marketing approval;
- competitors may develop alternatives that render our product candidates obsolete or less attractive;
- product candidates we develop may be covered by third parties' patents or other exclusive rights;
- the market for a product candidate may change during development or commercialization so that such a product may become unreasonable to continue to develop or commercialize;

- a product candidate may not be capable of being produced in commercial quantities at an acceptable cost, or at all; and
- a product candidate may not be accepted as safe and effective by patients, the medical community, or third-party payors.

If any of these events occur, we may be forced to abandon our development efforts for one or more product candidates, or we may not be able to identify, license, discover, develop, or commercialize additional product candidates, which would have a material adverse effect on our business, financial condition or results of operations and could potentially cause us to cease operations.

Failure to obtain or maintain adequate reimbursement or insurance coverage for products, if any, could limit our ability to market those products and decrease our ability to generate revenue.

The pricing, coverage, and reimbursement of our approved products, if any, must be sufficient to support our commercial efforts and other development programs and the availability and adequacy of coverage and reimbursement by third-party payors, including governmental and private insurers, are essential for most patients to be able to afford expensive treatments. Sales of our approved products, if any, will depend substantially, both domestically and abroad, on the extent to which the costs of our approved products, if any, will be paid for or reimbursed by health maintenance, managed care, pharmacy benefit and similar healthcare management organizations, or government payors and private payors. If coverage and reimbursement are not available, or are available only in limited amounts, we may have to subsidize or provide products for free or we may not be able to successfully commercialize our products.

In addition, there is significant uncertainty related to the insurance coverage and reimbursement for newly approved products. In the United States, the principal decisions about coverage and reimbursement for new drugs are typically made by the Centers for Medicare & Medicaid Services (“CMS”), an agency within the U.S. Department of Health and Human Services, as CMS decides whether and to what extent a new drug will be covered and reimbursed under Medicare. Private payors tend to follow the coverage reimbursement policies established by CMS to a substantial degree. It is difficult to predict what CMS will decide with respect to reimbursement for novel product candidates such as ours and what reimbursement codes our product candidates may receive if approved.

Outside the United States, international operations are generally subject to extensive governmental price controls and other price-restrictive regulations, and we believe the increasing emphasis on cost-containment initiatives in Europe, Canada, and other countries has and will continue to put pressure on the pricing and usage of products. In many countries, the prices of products are subject to varying price control mechanisms as part of national health systems. Price controls or other changes in pricing regulation could restrict the amount that we are able to charge for our products, if any. Accordingly, in markets outside the United States, the potential revenue from the sale of our products may be insufficient to generate commercially reasonable revenue and profits.

Moreover, increasing efforts by governmental and private payors in the United States and abroad to limit or reduce healthcare costs may result in restrictions on coverage and the level of reimbursement for new products and, as a result, they may not cover or provide adequate payment for our products. We expect to experience pricing pressures in connection with products due to the increasing trend toward managed healthcare, including the increasing influence of health maintenance organizations and additional legislative changes. The downward pressure on healthcare costs in general, particularly prescription drugs has and is expected to continue to increase in the future. As a result, profitability of our products, if any, may be more difficult to achieve even if they receive regulatory approval.

Risks Related to Our Business Operations and Employees

Our failure to attract and retain senior management and key scientific personnel may prevent us from successfully developing our product candidates or any future product candidate, conducting our clinical trials and commercializing any products.

Our success depends in part on our continued ability to attract, retain and motivate highly qualified management, clinical and scientific personnel. We believe that our future success is highly dependent upon the contributions of our senior management, particularly our president and chief executive officer, chief financial officer, chief medical officer, as well as our senior scientists and other members of our senior management team. The loss of services of any of these individuals could delay or prevent the successful development of our product pipeline, completion of our planned clinical trials or the commercialization of the products we develop.

Although we have not historically experienced significant difficulties attracting and retaining qualified employees, we could experience such problems in the future. For example, competition for qualified personnel in the biotechnology and pharmaceuticals field is intense due to the limited number of individuals who possess the skills and experience required by our industry. We will need to hire additional personnel as we expand our clinical development and commercial activities. We may not be able to attract and retain quality personnel on acceptable terms, or at all.

Our employees, independent contractors, principal investigators, CROs, consultants and collaborators may engage in misconduct or other improper activities, including noncompliance with regulatory standards and requirements and insider trading.

We are exposed to the risk that our employees, independent contractors, consultants and collaborators may engage in fraudulent conduct or other illegal activity. Misconduct by these parties could include intentional, reckless and/or negligent conduct or unauthorized activities that violate: (1) regulations of regulatory authorities in jurisdictions where we are performing activities in relation to our product candidates, including those laws requiring the reporting of true, complete and accurate information to such authorities; (2) manufacturing regulations and standards; (3) fraud and abuse and anti-corruption laws and regulations; or (4) laws that require the reporting of true and accurate financial information and data. In particular, sales, marketing and business arrangements in the healthcare industry are subject to extensive laws and regulations intended to prevent fraud, bias, misconduct, kickbacks, self-dealing and other abusive practices, and these laws may differ substantially from country to country. These laws and regulations may restrict or prohibit a wide range of pricing, discounting, marketing and promotion, sales commission, customer incentive programs and other business arrangements. These activities also include the improper use of information obtained in the course of clinical trials, which could result in regulatory sanctions and serious harm to our reputation. It is not always possible to identify and deter misconduct by employees and other third parties, and the precautions we take to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting ourselves from governmental investigations or other actions or lawsuits stemming from a failure to be in compliance with such laws or regulations. If any such actions are instituted against us, and we are not successful in defending itself or asserting our rights, those actions could have a significant impact on our business including the imposition of significant civil, criminal and administrative penalties, damages, monetary fines, possible exclusion from participation in subsidized healthcare programs in a given country, contractual damages, reputational harm, diminished profits and future earnings, and curtailment of our operations, any of which could adversely affect our ability to operate our business and our results of operations.

Risks Related to the Our Common Stock

Our common stock may be delisted from the NASDAQ Capital Market if we are unable to maintain compliance with NASDAQ's continued listing standards.

NASDAQ imposes, among other requirements, continued listing standards including minimum bid and public float requirements. The price of our common stock must trade at or above $1.00 to comply with NASDAQ's minimum bid requirement for continued listing on the NASDAQ Capital Market. If our stock trades at bid prices of less than $1.00 for a period in excess of 30 consecutive business days, NASDAQ could send a deficiency notice to the company for not remaining in compliance with the minimum bid listing standards. During the third quarter of fiscal year 2017, our common stock never traded below $1.00. However, if the closing bid price of our common stock fails to meet NASDAQ's minimum closing bid price requirement, or if we otherwise fail to meet any other applicable requirements of NASDAQ and we are unable to regain compliance, NASDAQ may make a determination to delist our common stock.

Any delisting of our common stock could adversely affect the market liquidity of our common stock and the market price of our common stock could decrease. Furthermore, if our common stock were delisted it could adversely affect our ability to obtain financing for the continuation of our operations and/or result in the loss of confidence by investors, customers, suppliers and employees.

Our principal stockholders and management own a significant percentage of our stock and are able to exert significant control over matters subject to stockholder approval.

Based on the beneficial ownership of our common stock as of September 30, 2017, our executive officers and directors, together with holders of 5% or more of our common stock outstanding and their respective affiliates, beneficially own approximately 57% of our common stock. Accordingly, these stockholders have significant influence over the outcome of corporate actions requiring stockholder approval, including the election of directors, consolidation or sale of all or substantially all of our assets or any other significant corporate transaction. The interests of these stockholders may not be the same as or may even conflict with your interests. For example, these stockholders could delay or prevent a change of control, even if such a change of control would benefit our other stockholders, which could deprive our stockholders of an opportunity to receive a premium for their common stock as part of a sale of the company or our assets and might affect the prevailing market price of our common stock. The significant concentration of stock ownership may adversely affect the trading price of our common stock due to investors' perception that conflicts of interest may exist or arise.

We are an "emerging growth company" and we cannot be certain if the reduced disclosure requirements applicable to emerging growth companies will make our common stock less attractive to investors.

We are an "emerging growth company," as defined in the JOBS Act, and may take advantage of certain exemptions from various reporting requirements that are applicable to other public companies that are not "emerging growth companies" including not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act, reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements and exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and stockholder approval of any golden parachute payments not previously approved. We cannot predict if investors will find our common stock less attractive because we may rely on these exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and our stock price may be more volatile.

In addition, Section 102 of the JOBS Act also provides that an "emerging growth company" can take advantage of the extended transition period provided in Section 7(a)(2)(B) of the Securities Act for complying with new or revised accounting standards. An "emerging growth company" can therefore delay the adoption of certain accounting standards until those standards would otherwise apply to private companies. However, we are choosing to "opt out" of such extended transition period, and as a result, we will comply with new or revised accounting standards on the relevant dates on which adoption of such standards is required for non-emerging growth companies. Section 107 of the JOBS Act provides that our decision to opt out of the extended transition period for complying with new or revised accounting standards is irrevocable.

Future sales of our common stock or securities convertible or exchangeable for our common stock may depress our stock price.

If our existing stockholders or holders of our options sell, or indicate an intention to sell, substantial amounts of our common stock in the public market, the trading price of our common stock could decline. The perception in the market that these sales may occur could also cause the trading price of our common stock to decline. As of September 30, 2017, there were a total of 16,284,921 shares of our common stock outstanding.

Our quarterly operating results may fluctuate significantly or may fall below the expectations of investors or securities analysts, each of which may cause our stock price to fluctuate or decline.

We expect our operating results to be subject to quarterly fluctuations. Our net loss and other operating results will be affected by numerous factors, including:

- variations in the level of our operating expenses;
- receipt, modification or termination of government contracts or grants, and the timing of payments we receive under these arrangements;
- Our execution of any collaborative, licensing or similar arrangements, and the timing of payments we may make under these arrangements; and
- any intellectual property infringement lawsuit or opposition, interference or cancellation proceeding in which we may become involved.

If our quarterly operating results fall below the expectations of investors or securities analysts, the price of our common stock could decline substantially. Furthermore, any quarterly fluctuations in our operating results may, in turn, cause the price of the company's stock to fluctuate substantially. We believe that quarterly comparisons of our financial results are not necessarily meaningful and should not be relied upon as an indication of our future performance.

Provisions of our charter documents or Delaware law could delay or prevent an acquisition of us, even if the acquisition would be beneficial to our stockholders, and could make it more difficult for you to change management.

Provisions in our amended and restated certificate of incorporation and our amended and restated bylaws may discourage, delay or prevent a merger, acquisition or other change in control that our stockholders may consider favorable, including transactions in which our stockholders might otherwise receive a premium for their shares. In addition, these provisions may frustrate or prevent any attempt by our stockholders to replace or remove our current management by making it more difficult to replace or remove our Board of Directors. These provisions include:

- a classified board of directors so that not all directors are elected at one time;
- a prohibition on stockholder action through written consent;
- no cumulative voting in the election of directors;
- the exclusive right of our Board of Directors to elect a director to fill a vacancy created by the expansion of our Board of Directors or the resignation, death or removal of a director;
- a requirement that special meetings of our Stockholders be called only by our Board of Directors, the chairman of our Board of Directors, the chief executive officer or, in the absence of a chief executive officer, the president;
- an advance notice requirement for stockholder proposals and nominations;
- the authority of our Board of Directors to issue preferred stock with such terms as our Board of Directors may determine; and
- a requirement of approval of not less than 66 2/3% of all outstanding shares of our capital stock entitled to vote to amend any bylaws by stockholder action, or to amend specific provisions of our certificate of incorporation.

In addition, Delaware law prohibits a publicly held Delaware corporation from engaging in a business combination with an interested stockholder, generally a person who, together with its affiliates, owns or within the last three years has owned 15% or more of the company's voting stock, for a period of three years after the date of the transaction in which the person became an interested stockholder, unless the business combination is approved in a prescribed manner. Accordingly, Delaware law may discourage, delay or prevent a change in control of the company. Furthermore, our amended and restated certificate of incorporation specifies that the Court of Chancery of the State of Delaware will be the sole and exclusive forum for most legal actions involving actions brought against us by our stockholders. We believe this provision benefits the company by providing increased consistency in the application of Delaware law by chancellors particularly experienced in resolving corporate disputes, efficient administration of cases on a more expedited schedule relative to other forums and protection against the burdens of multi-forum litigation. However, the provision may have the effect of discouraging lawsuits against our directors and officers. The enforceability of similar choice of forum provisions in other companies' certificates of incorporation has been challenged in legal proceedings, and it is possible that, in connection with any applicable action brought against us, a court could find the choice of forum provisions contained in our amended and restated certificate of incorporation to be inapplicable or unenforceable in such action.

Provisions in our charter and other provisions of Delaware law could limit the price that investors are willing to pay in the future for shares of our common stock.

Our employment agreements with our executive officers may require us to pay severance benefits to any of those persons who are terminated in connection with a change of control, which could harm our business, financial condition or results of operations.

Our current executive officers are parties to employment agreements providing for aggregate cash payments of up to approximately $1.3 million at September 30, 2017 for severance and other benefits in the event of a termination of employment in connection with a change of control. The payment of these severance benefits could harm our business, financial condition and results of operations. In addition, these potential severance payments may discourage or prevent third parties from seeking a business combination with Synlogic.

We do not anticipate paying any cash dividends on our common stock in the foreseeable future; therefore, capital appreciation, if any, of our common stock will be your sole source of gain for the foreseeable future.

We have never declared or paid cash dividends on our common stock. We do not anticipate paying any cash dividends on our common stock in the foreseeable future. We currently intend to retain all available funds and any future earnings to fund our operations. In addition, the terms of any future debt financing arrangement may contain terms prohibiting or limiting the amount of dividends that may be declared or paid on our common stock. As a result, capital appreciation, if any, of our common stock will be your sole source of gain for the foreseeable future.

If securities or industry analysts do not publish research, or publish inaccurate or unfavorable research, about our business, our stock price and trading volume could decline.

The trading market for our common stock will depend, in part, on the research and reports that securities or industry analysts publish about us or our business. If one or more of the analysts who cover us downgrade our common stock or publish inaccurate or unfavorable research about our business, our stock price would likely decline. In addition, if our operating results fail to meet the forecast of analysts, our stock price would likely decline. If one or more of these analysts cease coverage of us or fail to publish reports on us regularly, demand for our common stock could decrease, which might cause our stock price and trading volume to decline.

Changes in, or interpretations of, accounting rules and regulations could result in unfavorable accounting charges or require us to change our compensation policies.

Accounting methods and policies for biopharmaceutical companies, including policies governing revenue recognition, research and development and related expenses and accounting for stock-based compensation, are subject to further review, interpretation and guidance from relevant accounting authorities, including the SEC. Changes to, or interpretations of, accounting methods or policies may require us to reclassify, restate or otherwise change or revise our financial statements, including those contained in this periodic report.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds.

(a) ***Recent Sales of Unregistered Equity Securities***

None.

(b) ***Use of Proceeds***

On September 30, 2015, the SEC declared effective Mirna's registration statement on Form S-1 (File No. 333-206544), as amended, filed in connection with its initial public offering. Pursuant to the registration statement, Mirna registered the offer and sale of 6,250,000 shares of common stock with an aggregate offering price of approximately $43.8 million, as well as the issuance of an additional 704,962 shares of common stock pursuant to the underwriters' partial exercise of their option to purchase additional shares, for an aggregate offering price of approximately $4.9 million. In total, Mirna issued and sold an aggregate of 6,954,962 shares of common stock at a price to the public of $7.00 per share for an aggregate offering price of approximately $48.7 million. The managing underwriters of the offering were Citigroup, Leerink Partners, Oppenheimer & Co. and Cantor Fitzgerald & Co. After deducting underwriting discounts and commissions and offering expenses paid or payable by Mirna of $5.0 million, the aggregate net proceeds from the offering were $43.7 million. No offering expenses were paid or are payable, directly or indirectly, to Mirna's or the Company's directors or officers, to persons owning 10% or more of any class of Mirna's or the Company's equity securities or to any of Mirna's or the Company's affiliates.

The net proceeds from Mirna's initial public offering had been invested in a variety of capital preservation investments, including short-term, investment-grade, interest-bearing instruments and U.S. government securities. From September 30, 2015 through the date of completion of the Merger on August 28, 2017, Mirna had used all of the net initial public offering proceeds to advance its product candidates through clinical trial programs and for working capital and general corporate purposes.

Item 3. Defaults Upon Senior Securities.

None.

Item 4. Mine Safety Disclosures.

Not applicable.

Item 5. Other Information.

None.

Item 6. Exhibits.

Table of Contents

EXHIBIT INDEX

Exhibit Number	Exhibit Description	Filed with this Report	Incorporated by Reference herein from Form or Schedule	Filing Date	SEC File/Reg. Number
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)	5/16/2017	001-37566
3.1	Certificate of Amendment (Reverse Stock Split) to the Amended and Restated Certificate of Incorporation, dated August 25, 2017		8-K (Exhibit 3.1)	8/28/2017	001-37566
3.2	Certificate of Amendment (Name Change) to the Amended and Restated Certificate of Incorporation, dated August 28, 2017		8-K (Exhibit 3.2)	8/28/2017	001-37566
10.1+	Form of Indemnification Agreement between the Company and each of its directors and officers		S-1/A (Exhibit 10.13)	9/11/2015	333-206544
10.2+	Offer Letter by and between Synlogic and Jose Carlos Gutierrez-Ramos, Ph.D., dated as of March 20, 2015		8-K (Exhibit 10.2)	8/28/2017	001-37566
10.3+	First Amendment to Offer Letter by and between Synlogic and Jose Carlos Gutierrez-Ramos, Ph.D., dated as of May 8, 2017		8-K (Exhibit 10.3)	8/28/2017	001-37566
10.4+	Offer Letter by and between Synlogic and Todd Shegog, dated as of June 17, 2016		8-K (Exhibit 10.4)	8/28/2017	001-37566
10.5+	First Amendment to Offer Letter by and between Synlogic and Todd Shegog, dated as of May 8, 2017		8-K (Exhibit 10.5)	8/28/2017	001-37566
10.6+	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)	8/28/2017	001-37566
10.7+	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)	8/28/2017	001-37566
10.8+	Second Amendment to Offer Letter by and between Synlogic and Aoife M. Brennan, MB, BCh, BAO, MMSc, dated as of May 8, 2017		8-K (Exhibit 10.8)	8/28/2017	001-37566
10.9+	Amended and Restated Letter Agreement by and between Paul Miller, Ph.D., dated as of May 16, 2017		8-K (Exhibit 10.9)	8/28/2017	001-37566
10.10+	Separation Agreement by and between the Company and Paul Lammers, dated as of August 20, 2017.		8-K (Exhibit 10.10)	8/28/2017	001-37566
10.11+	Separation Agreement by and between the Company and Alan Fuhrman, dated as of August 20, 2017.		8-K (Exhibit 10.11)	8/28/2017	001-37566
10.12†^	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		8-K (Exhibit 10.12)	8/28/2017	001-37566
10.13†	License Agreement by and between Synlogic, Inc. and Synlogic IBDCo, Inc., dated as of July 16, 2015		8-K (Exhibit 10.13)	8/28/2017	001-37566
10.14†	License Agreement by and among Trustees of Boston University, Massachusetts Institute of Technology and Synlogic, Inc., dated as of October 18, 2015		8-K (Exhibit 10.14)	8/28/2017	001-37566
10.15†	Exclusive Patent License Agreement by and between Massachusetts Institute of Technology and Synlogic, Inc., dated as of November 9, 2015; as amended by a Letter Agreement by and among Massachusetts Institute of Technology, Synlogic, Inc. and Synlogic IBDCo, dated as of November 9, 2015 and a First Amendment to the Exclusive Patent License Agreement, dated as of July 20, 2016		8-K (Exhibit 10.15)	8/28/2017	001-37566
10.16+	2017 Stock Incentive Plan	X			
10.17+	Form of Stock Option Grant Notice and Stock Option Agreement under 2017 Stock Incentive Plan.	X			
10.18+	Employment Agreement, dated as of September 4, 2017, by and between the Company and Andrew W. Gengos.		8-K (Exhibit 10.1)	10/10/2017	001-37566

10.19	Sales Agreement, dated as of October 13, 2017, between the Company and Cowen and Company, LLC		8-K (Exhibit 1.1)	10/16/2017	001-37566
14.1	Code of Business Conduct and Ethics		8-K (Exhibit 14.1)	8/28/2017	001-37566
31.1	Certification of Chief Executive Officer required by Rule 13a-14(a) or Rule 15d-14(a).	X			
31.2	Certification of Chief Financial Officer required by Rule 13a-14(a) or Rule 15d-14(a).	X			
32.1*	Certification required by Rule 13a-14(b) or Rule 15d-14(b) and Section 1350 of Chapter 63 of Title 18 of the United States Code (18 U.S.C. §1350).	X			
32.2*	Certification required by Rule 13a-14(b) or Rule 15d-14(b) and Section 1350 of Chapter 63 of Title 18 of the United States Code (18 U.S.C. §1350).	X			
101.INS	XBRL Instance Document	X			
101.SCH	XBRL Taxonomy Extension Schema Document	X			
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document	X			
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document	X			
101.LAB	XBRL Taxonomy Extension Label Linkbase Document	X			
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document	X			

(*) The certifications attached as Exhibit 32.1 and Exhibit 32.2 that accompany this Quarterly Report on Form 10-Q are not deemed filed with the Securities and Exchange Commission and are not to be incorporated by reference into any filing of Synlogic, Inc. under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended (whether made before or after the date of such Form 10-Q), irrespective of any general incorporation language contained in such filing

^ 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.

† Confidential treatment has been requested or granted as to certain portions, which portions have been omitted and filed separately with the SEC.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

Date: November 13, 2017

SYNLOGIC, INC.

By: /S/ JOSE CARLOS GUTIÉRREZ-RAMOS
Jose Carlos Gutiérrez-Ramos
President and Chief Executive Officer
(Principal Executive Officer)

By: /s/ TODD SHEGOG
Todd Shegog
Chief Financial Officer and Secretary
(Principal Financial Officer and Principal Accounting Officer)

Exhibit 10.16

SYNLOGIC, INC

2017 STOCK INCENTIVE PLAN

1. DEFINITIONS.

Unless otherwise specified or unless the context otherwise requires, the following terms, as used in this Synlogic, Inc. 2017 Stock Incentive Plan, have the following meanings:

Administrator means the Board of Directors, unless it has delegated power to act on its behalf to the Committee, in which case the Administrator means the Committee.

Affiliate means a corporation or other entity which, for purposes of Section 424 of the Code, is a parent or subsidiary of the Company, direct or indirect.

Agreement means an agreement between the Company and a Participant delivered pursuant to the Plan and pertaining to a Stock Right, in such form as the Administrator shall approve.

Board of Directors means the Board of Directors of the Company.

Cause means, with respect to a Participant (a) dishonesty with respect to the Company or any Affiliate, (b) insubordination, substantial malfeasance or non-feasance of duty, (c) unauthorized disclosure of confidential information, (d) breach by the Participant of any provision of any employment, consulting, advisory, nondisclosure, non-competition or similar agreement between the Participant and the Company or any Affiliate, and (e) conduct substantially prejudicial to the business of the Company or any Affiliate; provided, however, that any provision in an agreement between the Participant and the Company or an Affiliate, which contains a conflicting definition of Cause for termination and which is in effect at the time of such termination, shall supersede this definition with respect to that Participant. The determination of the Administrator as to the existence of Cause will be conclusive on the Participant and the Company.

Code means the United States Internal Revenue Code of 1986, as amended including any successor statute, regulation and guidance thereto.

Committee means the committee of the Board of Directors to which the Board of Directors has delegated power to act under or pursuant to the provisions of the Plan.

Common Stock means shares of the Company’s common stock, $0.0001 par value per share.

Company means Synlogic, Inc., a Delaware corporation.

Consultant means any natural person who is an advisor or consultant that provides bona fide services to the Company or its Affiliates, provided that such services are not in connection with the offer or sale of securities in a capital raising transaction, and do not directly or indirectly promote or maintain a market for the Company's or its Affiliates' securities.

Disability or Disabled means permanent and total disability as defined in Section 22(e)(3) of the Code.

Employee means any employee of the Company or of an Affiliate (including, without limitation, an employee who is also serving as an officer or director of the Company or of an Affiliate), designated by the Administrator to be eligible to be granted one or more Stock Rights under the Plan.

Fair Market Value of a Share of Common Stock means:

(1) If the Common Stock is listed on a national securities exchange or traded in the over-the-counter market and sales prices are regularly reported for the Common Stock, the closing or, if not applicable, the last price of the Common Stock on the composite tape or other comparable reporting system for the trading day on the applicable date and if such applicable date is not a trading day, the last market trading day prior to such date;

(2) If the Common Stock is not traded on a national securities exchange but is traded on the over-the-counter market, if sales prices are not regularly reported for the Common Stock for the trading day referred to in clause (1), and if bid and asked prices for the Common Stock are regularly reported, the mean between the bid and the asked price for the Common Stock at the close of trading in the over-the-counter market for the most recent trading day on which Common Stock was traded on the applicable date and if such applicable date is not a trading day, the last market trading day prior to such date; and

(3) If the Common Stock is neither listed on a national securities exchange nor traded in the over-the-counter market, such value as the Administrator, in good faith, shall determine.

ISO means an option intended to qualify as an incentive stock option under Section 422 of the Code.

Non-Qualified Option means an option which is not intended to qualify as an ISO.

Option means an ISO or Non-Qualified Option granted under the Plan.

Participant means an Employee, director or Consultant of the Company or an Affiliate to whom one or more Stock Rights are granted under the Plan. As used herein, "Participant" shall include "Participant's Survivors" where the context requires.

Plan means this Synlogic, Inc. 2017 Stock Incentive Plan.

Securities Act means the Securities Act of 1933, as amended.

Shares means shares of the Common Stock as to which Stock Rights have been or may be granted under the Plan or any shares of capital stock into which the Shares are changed or for which they are exchanged within the provisions of Paragraph 3 of the Plan. The Shares issued under the Plan may be authorized and unissued shares or shares held by the Company in its treasury, or both.

Stock-Based Award means a grant by the Company under the Plan of an equity award or an equity based award which is not an Option or a Stock Grant.

Stock Grant means a grant by the Company of Shares under the Plan.

Stock Right means a right to Shares or the value of Shares of the Company granted pursuant to the Plan – an ISO, a Non-Qualified Option, a Stock Grant or a Stock-Based Award.

Survivor means a deceased Participant's legal representatives and/or any person or persons who acquired the Participant's rights to a Stock Right by will or by the laws of descent and distribution.

2. PURPOSES OF THE PLAN.

The Plan is intended to encourage ownership of Shares by Employees and directors of and certain Consultants to the Company and its Affiliates in order to attract and retain such people, to induce them to work for the benefit of the Company or of an Affiliate and to provide additional incentive for them to promote the success of the Company or of an Affiliate. The Plan provides for the granting of ISOs, Non-Qualified Options, Stock Grants and Stock-Based Awards.

3. SHARES SUBJECT TO THE PLAN.

(a) The number of Shares which may be issued from time to time pursuant to this Plan shall be 3,214,926 of shares of Common Stock, or the equivalent of such number of Shares after the Administrator, in its sole discretion, has interpreted the effect of any stock split, stock dividend, combination, recapitalization or similar transaction in accordance with Paragraph 24 of the Plan.

(b) If an Option ceases to be "outstanding", in whole or in part (other than by exercise), or if the Company shall reacquire at not more than its original issuance price any Shares issued pursuant to a Stock Grant or Stock-Based Award, or if any Stock Right expires or is forfeited, cancelled, or otherwise terminated or results in any Shares not being issued, the unissued or reacquired Shares which were subject to such Stock Right shall again be available for issuance from time to time pursuant to this Plan. Notwithstanding the foregoing, if a Stock Right is exercised, in whole or in part, by tender of Shares or if the Company or an Affiliate's tax

withholding obligation is satisfied by withholding Shares, the number of Shares deemed to have been issued under the Plan for purposes of the limitation set forth in Paragraph 3(a) above shall be the number of Shares that were subject to the Stock Right or portion thereof, and not the net number of Shares actually issued. However, in the case of ISOs, the foregoing provisions shall be subject to any limitations under the Code.

4. ADMINISTRATION OF THE PLAN.

The Administrator of the Plan will be the Board of Directors, except to the extent the Board of Directors delegates its authority to the Committee, in which case the Committee shall be the Administrator. Subject to the provisions of the Plan, the Administrator is authorized to:

(a) Interpret the provisions of the Plan and all Stock Rights and to make all rules and determinations which it deems necessary or advisable for the administration of the Plan;

(b) Determine which Employees, directors and Consultants shall be granted Stock Rights;

(c) Determine the number of Shares for which a Stock Right or Stock Rights shall be granted;

(d) Specify the terms and conditions upon which a Stock Right or Stock Rights may be granted;

(e) Amend any term or condition of any outstanding Stock Right, including, without limitation, to reduce or increase the exercise price or purchase price, accelerate the vesting schedule or extend the expiration date, provided that (i) such term or condition as amended is permitted by the Plan; (ii) any such amendment shall not impair the rights of a Participant under any Stock Right previously granted without such Participant's consent or in the event of death of the Participant the Participant's Survivors; and (iii) any such amendment shall be made only after the Administrator determines whether such amendment would cause any adverse tax consequences to the Participant, including, but not limited to, the annual vesting limitation contained in Section 422(d) of the Code and described in Paragraph 6(b)(iv) below with respect to ISOs and pursuant to Section 409A of the Code;

(f) Buy out for a payment in cash or Shares, a Stock Right previously granted and/or cancel any such Stock Right and grant in substitution therefor other Stock Rights, covering the same or a different number of Shares and having an exercise price or purchase price per share which may be lower or higher than the exercise price or purchase price of the cancelled Stock Right, based on such terms and conditions as the Administrator shall establish and the Participant shall accept; and

(g) Adopt any sub-plans applicable to residents of any specified jurisdiction as it deems necessary or appropriate in order to comply with or take advantage of any tax or other laws applicable to the Company, any Affiliate or to Participants or to otherwise facilitate the administration of the Plan, which sub-plans may include additional restrictions or conditions applicable to Stock Rights or Shares issuable pursuant to a Stock Right;

provided, however, that all such interpretations, rules, determinations, terms and conditions shall be made and prescribed in the context of not causing any adverse tax consequences under Section 409A of the Code and preserving the tax status under Section 422 of the Code of those Options which are designated as ISOs. Subject to the foregoing, the interpretation and construction by the Administrator of any provisions of the Plan or of any Stock Right granted under it shall be final, unless otherwise determined by the Board of Directors, if the Administrator is the Committee. In addition, if the Administrator is the Committee, the Board of Directors may take any action under the Plan that would otherwise be the responsibility of the Committee.

To the extent permitted under applicable law, the Board of Directors or the Committee may allocate all or any portion of its responsibilities and powers to any one or more of its members and may delegate all or any portion of its responsibilities and powers to any other person selected by it. The Board of Directors or the Committee may revoke any such allocation or delegation at any time.

5. ELIGIBILITY FOR PARTICIPATION.

The Administrator will, in its sole discretion, name the Participants in the Plan; provided, however, that each Participant must be an Employee, director or Consultant of the Company or of an Affiliate at the time a Stock Right is granted, or have received a grant of a profits interest from Synlogic, LLC as an employee of or consultant to Synlogic, LLC and be granted a Stock Right as a former employee of or consultant to Synlogic, LLC pursuant to the terms of the merger of Synlogic, LLC into the Company. Notwithstanding the foregoing, the Administrator may authorize the grant of a Stock Right to a person not then an Employee, director or Consultant of the Company or of an Affiliate; provided, however, that the actual grant of such Stock Right shall be conditioned upon such person becoming eligible to become a Participant at or prior to the time of the execution of the Agreement evidencing such Stock Right. ISOs may be granted only to Employees who are deemed to be residents of the United States for tax purposes. Non-Qualified Options, Stock Grants and Stock-Based Awards may be granted to any Employee, director or Consultant of the Company or an Affiliate. The granting of any Stock Right to any individual shall neither entitle that individual to, nor disqualify him or her from, participation in any other grant of Stock Rights or any grant under any other benefit plan established by the Company or any Affiliate for Employees, directors or Consultants.

6. TERMS AND CONDITIONS OF OPTIONS.

Each Option shall be set forth in writing in an Option Agreement, duly executed by the Company and, to the extent required by law or requested by the Company, by the Participant. The Administrator may provide that Options be granted subject to such terms and conditions, consistent with the terms and conditions specifically required under this Plan, as the Administrator may deem appropriate including, without limitation, subsequent approval by the shareholders of the Company of this Plan or any amendments thereto. The Option Agreements shall be subject to at least the following terms and conditions:

(a) Non-Qualified Options: Each Option intended to be a Non-Qualified Option shall be subject to the terms and conditions which the Administrator determines to be appropriate and

in the best interest of the Company, subject to the following minimum standards for any such Non-Qualified Option:

(i) Exercise Price: Each Option Agreement shall state the exercise price (per share) of the Shares covered by each Option, which exercise price shall be determined by the Administrator and shall be at least equal to the Fair Market Value per share of the Common Stock on the date of grant of the Option.

(ii) Number of Shares: Each Option Agreement shall state the number of Shares to which it pertains.

(iii) Option Periods: Each Option Agreement shall state the date or dates on which it first is exercisable and the date after which it may no longer be exercised, and may provide that the Option rights accrue or become exercisable in installments over a period of months or years, or upon the occurrence of certain conditions or the attainment of stated goals or events.

(iv) Option Conditions: Exercise of any Option may be conditioned upon the Participant's execution of a Share purchase agreement in form satisfactory to the Administrator providing for certain protections for the Company and its other shareholders, including requirements that:

A. The Participant's or the Participant's Survivors' right to sell or transfer the Shares may be restricted; and

B. The Participant or the Participant's Survivors may be required to execute letters of investment intent and must also acknowledge that the Shares will bear legends noting any applicable restrictions.

(v) Term of Option: Each Option shall terminate not more than ten years from the date of the grant or at such earlier time as the Option Agreement may provide.

(b) ISOs: Each Option intended to be an ISO shall be issued only to an Employee who is deemed to be a resident of the United States for tax purposes, and shall be subject to the following terms and conditions, with such additional restrictions or changes as the Administrator determines are appropriate but not in conflict with Section 422 of the Code and relevant regulations and rulings of the Internal Revenue Service:

(i) Minimum standards: The ISO shall meet the minimum standards required of Non-Qualified Options, as described in Paragraph 6(a) above, except clause (i) thereunder.

(ii) Exercise Price: Immediately before the ISO is granted, if the Participant owns, directly or by reason of the applicable attribution rules in Section 424(d) of the Code:

A. Ten percent (10%) or less of the total combined voting power of all classes of stock of the Company or an Affiliate, the exercise price per share of the Shares covered by each ISO shall not be less than one hundred percent (100%) of the Fair Market Value per share of the Common Stock on the date of grant of the Option; or

B. More than ten percent (10%) of the total combined voting power of all classes of stock of the Company or an Affiliate, the exercise price per share of the Shares covered by each ISO shall not be less than one hundred ten percent (110%) of the Fair Market Value per share of the Common Stock on the date of grant of the Option.

(iii) Term of Option: For Participants who own:

A. Ten percent (10%) or less of the total combined voting power of all classes of stock of the Company or an Affiliate, each ISO shall terminate not more than ten years from the date of the grant or at such earlier time as the Option Agreement may provide; or

B. More than ten percent (10%) of the total combined voting power of all classes of stock of the Company or an Affiliate, each ISO shall terminate not more than five (5) years from the date of the grant or at such earlier time as the Option Agreement may provide.

(iv) Limitation on Yearly Exercise: The Option Agreements shall restrict the amount of ISOs which may become exercisable in any calendar year (under this or any other ISO plan of the Company or an Affiliate) so that the aggregate Fair Market Value (determined on the date each ISO is granted) of the stock with respect to which ISOs are exercisable for the first time by the Participant in any calendar year does not exceed one hundred thousand dollars ($100,000).

7. TERMS AND CONDITIONS OF STOCK GRANTS.

Each Stock Grant to a Participant shall state the principal terms in an Agreement duly executed by the Company and, to the extent required by law or requested by the Company, by the Participant. The Agreement shall be in a form approved by the Administrator and shall contain terms and conditions which the Administrator determines to be appropriate and in the best interest of the Company, subject to the following minimum standards:

(a) Each Agreement shall state the purchase price per share, if any, of the Shares covered by each Stock Grant, which purchase price shall be determined by the Administrator but shall not be less than the minimum consideration required by the Delaware General Corporation Law, if any, on the date of the grant of the Stock Grant;

(b) Each Agreement shall state the number of Shares to which the Stock Grant pertains; and

(c) Each Agreement shall include the terms of any right of the Company to restrict or reacquire the Shares subject to the Stock Grant, including the time and events upon which such rights shall accrue and the purchase price therefor, if any.

8. [INTENTIONALLY OMITTED]

9. EXERCISE OF OPTIONS AND ISSUE OF SHARES.

An Option (or any part or installment thereof) shall be exercised by giving written notice to the Company or its designee (in a form acceptable to the Administrator, which may include electronic notice), together with provision for payment of the aggregate exercise price in accordance with this Paragraph for the Shares as to which the Option is being exercised, and upon compliance with any other condition(s) set forth in the Option Agreement. Such notice shall be signed by the person exercising the Option (which signature may be provided electronically in a form acceptable to the Administrator), shall state the number of Shares with respect to which the Option is being exercised and shall contain any representation required by the Plan or the Option Agreement. Payment of the exercise price for the Shares as to which such Option is being exercised shall be made (a) in United States dollars in cash or by check, or (b) at the discretion of the Administrator, through delivery of shares of Common Stock held for at least six months (if required to avoid negative accounting treatment) having a Fair Market Value equal as of the date of the exercise to the aggregate cash exercise price for the number of Shares as to which the Option is being exercised, or (c) at the discretion of the Administrator, by having the Company retain from the Shares otherwise issuable upon exercise of the Option, a number of Shares having a Fair Market Value equal as of the date of exercise to the aggregate exercise price for the number of Shares as to which the Option is being exercised, or (d) at the discretion of the Administrator (after consideration of applicable securities, tax and accounting implications), by delivery of the grantee's personal recourse note bearing interest payable not less than annually at no less than one hundred percent (100%) of the applicable Federal rate, as defined in Section 1274(d) of the Code, or (e) at the discretion of the Administrator, in accordance with a cashless exercise program established with a securities brokerage firm, and approved by the Administrator, or (f) at the discretion of the Administrator, by any combination of (a), (b), (c), (d) and (e) above or (g) at the discretion of the Administrator, by payment of such other lawful consideration as the Administrator may determine. Notwithstanding the foregoing, the Administrator shall accept only such payment on exercise of an ISO as is permitted by Section 422 of the Code.

The Company shall then reasonably promptly deliver the Shares as to which such Option was exercised to the Participant (or to the Participant's Survivors, as the case may be). In determining what constitutes "reasonably promptly," it is expressly understood that the issuance and delivery of the Shares may be delayed by the Company in order to comply with any law or regulation (including, without limitation, state securities or "blue sky" laws) which requires the Company to take any action with respect to the Shares prior to their issuance. The Shares shall, upon delivery, be fully paid, non-assessable Shares.

10. PAYMENT IN CONNECTION WITH THE ISSUANCE OF STOCK GRANTS AND STOCK-BASED AWARD AND ISSUE OF SHARES.

Any Stock Grant or Stock-Based Award requiring payment of a purchase price for the Shares as to which such Stock Grant or Stock-Based Award is being granted shall be made (a) in United States dollars in cash or by check, or (b) at the discretion of the Administrator, through delivery of shares of Common Stock held for at least six months (if required to avoid negative accounting treatment) and having a Fair Market Value equal as of the date of payment to the purchase price of the Stock Grant or Stock-Based Award, or (c) at the discretion of the Administrator (after consideration of applicable securities, tax and accounting implications), by delivery of the grantee's personal recourse note bearing interest payable not less than annually at no less than one hundred percent (100%) of the applicable Federal rate, as defined in Section 1274(d) of the Code, or (d) at the discretion of the Administrator, by any combination of (a), (b) and (c) above; or (e) at the discretion of the Administrator, by payment of such other lawful consideration as the Administrator may determine.

The Company shall, when required by the applicable Agreement, reasonably promptly deliver the Shares as to which such Stock Grant or Stock-Based Award was made to the Participant (or to the Participant's Survivors, as the case may be), subject to any escrow provision set forth in the applicable Agreement. In determining what constitutes "reasonably promptly," it is expressly understood that the issuance and delivery of the Shares may be delayed by the Company in order to comply with any law or regulation (including, without limitation, state securities or "blue sky" laws) which requires the Company to take any action with respect to the Shares prior to their issuance.

11. RIGHTS AS A SHAREHOLDER.

No Participant to whom a Stock Right has been granted shall have rights as a shareholder with respect to any Shares covered by such Stock Right except after due exercise of an Option or issuance of Shares as set forth in any Agreement, tender of the aggregate exercise or purchase price, if any, for the Shares being purchased and registration of the Shares in the Company's share register in the name of the Participant.

12. ASSIGNABILITY AND TRANSFERABILITY OF STOCK RIGHTS.

By its terms, a Stock Right granted to a Participant shall not be transferable by the Participant other than (i) by will or by the laws of descent and distribution, or (ii) as approved by the Administrator in its discretion and set forth in the applicable Agreement provided that no Stock Right may be transferred by a Participant for value. Notwithstanding the foregoing, an ISO transferred except in compliance with clause (i) above shall no longer qualify as an ISO. The designation of a beneficiary of a Stock Right by a Participant, with the prior approval of the Administrator and in such form as the Administrator shall prescribe, shall not be deemed a transfer prohibited by this Paragraph. Except as provided above during the Participant's lifetime a Stock Right shall only be exercisable by or issued to such Participant (or his or her legal representative) and shall not be assigned, pledged or hypothecated in any way (whether by operation of law or otherwise) and shall not be subject to execution, attachment or similar process. Any attempted transfer, assignment, pledge, hypothecation or other disposition of any Stock Right or of any rights granted thereunder contrary to the provisions of this Plan, or the levy of any attachment or similar process upon a Stock Right, shall be null and void.

13. EFFECT ON OPTIONS OF TERMINATION OF SERVICE OTHER THAN FOR CAUSE OR DEATH OR DISABILITY.

Except as otherwise provided in a Participant's Option Agreement, in the event of a termination of service (whether as an Employee, director or Consultant) with the Company or an Affiliate before the Participant has exercised an Option, the following rules apply:

(a) A Participant who ceases to be an Employee, director or Consultant of the Company or of an Affiliate (for any reason other than termination for Cause, Disability, or death for which events there are special rules in Paragraphs 14, 15, and 16, respectively), may exercise any Option granted to him or her to the extent that the Option is exercisable on the date of such termination of service, but only within such term as the Administrator has designated in a Participant's Option Agreement.

(b) Except as provided in Subparagraph (c) below, or Paragraph 15 or 16, in no event may an Option intended to be an ISO be exercised later than three months after the Participant's termination of employment.

(c) The provisions of this Paragraph, and not the provisions of Paragraph 15 or 16, shall apply to a Participant who subsequently becomes Disabled or dies after the termination of employment, director status or consultancy; provided, however, in the case of a Participant's Disability or death within three months after the termination of employment, director status or consultancy, the Participant or the Participant's Survivors may exercise the Option within one year after the date of the Participant's termination of service, but in no event after the date of expiration of the term of the Option.

(d) Notwithstanding anything herein to the contrary, if subsequent to a Participant's termination of employment, termination of director status or termination of consultancy, but prior to the exercise of an Option, the Administrator or the Board of Directors determines that, either prior or subsequent to the Participant's termination, the Participant engaged in conduct which would constitute Cause, then such Participant shall forthwith cease to have any right to exercise any Option.

(e) A Participant to whom an Option has been granted under the Plan who is absent from the Company or an Affiliate because of temporary disability (any disability other than a Disability as defined in Paragraph 1 hereof), or who is on leave of absence for any purpose, shall not, during the period of any such absence, be deemed, by virtue of such absence alone, to have terminated such Participant's employment, director status or consultancy with the Company or with an Affiliate, except as the Administrator may otherwise expressly provide; provided, however, that, for ISOs, any leave of absence granted by the Administrator of greater than ninety days, unless pursuant to a contract or statute that guarantees the right to reemployment, shall cause such ISO to become a Non-Qualified Option on the 181st day following such leave of absence.

(f) Except as required by law or as set forth in a Participant's Option Agreement, Options granted under the Plan shall not be affected by any change of a Participant's status within or among the Company and any Affiliates, so long as the Participant continues to be an Employee, director or Consultant of the Company or any Affiliate.

14. EFFECT ON OPTIONS OF TERMINATION OF SERVICE FOR CAUSE.

Except as otherwise provided in a Participant's Option Agreement, the following rules apply if the Participant's service (whether as an Employee, director or Consultant) with the Company or an Affiliate is terminated for Cause prior to the time that all of his or her outstanding Options have been exercised:

(a) All outstanding and unexercised Options as of the time the Participant is notified his or her service is terminated for Cause will immediately be terminated.

(b) Cause is not limited to events which have occurred prior to a Participant's termination of service, nor is it necessary that the Administrator's finding of Cause occur prior to termination. If the Administrator determines, subsequent to a Participant's termination of service but prior to the exercise of an Option, that either prior or subsequent to the Participant's termination the Participant engaged in conduct which would constitute Cause, then the right to exercise any Option is terminated.

15. EFFECT ON OPTIONS OF TERMINATION OF SERVICE FOR DISABILITY.

Except as otherwise provided in a Participant's Option Agreement,

(a) A Participant who ceases to be an Employee, director or Consultant of the Company or of an Affiliate by reason of Disability may exercise any Option granted to such Participant:

(i) To the extent that the Option has become exercisable but has not been exercised on the date of the Participant's termination of service due to Disability; and

(ii) In the event rights to exercise the Option accrue periodically, to the extent of a pro rata portion through the date of the Participant's termination of service due to Disability of any additional vesting rights that would have accrued on the next vesting date had the Participant not become Disabled. The proration shall be based upon the number of days accrued in the current vesting period prior to the date of the Participant's termination of service due to Disability.

(b) A Disabled Participant may exercise the Option only within the period ending one year after the date of the Participant's termination of service due to Disability, notwithstanding that the Participant might have been able to exercise the Option as to some or all of the Shares on a later date if the Participant had not been terminated due to Disability and had continued to be an Employee, director or Consultant or, if earlier, within the originally prescribed term of the Option.

(c) The Administrator shall make the determination both of whether Disability has occurred and the date of its occurrence (unless a procedure for such determination is set forth in another agreement between the Company and such Participant, in which case such procedure shall be used for such determination). If requested, the Participant shall be examined by a physician selected or approved by the Administrator, the cost of which examination shall be paid for by the Company.

16. EFFECT ON OPTIONS OF DEATH WHILE AN EMPLOYEE, DIRECTOR OR CONSULTANT.

Except as otherwise provided in a Participant's Option Agreement,

(a) In the event of the death of a Participant while the Participant is an Employee, director or Consultant of the Company or of an Affiliate, such Option may be exercised by the Participant's Survivors:

(i) To the extent that the Option has become exercisable but has not been exercised on the date of death; and

(ii) In the event rights to exercise the Option accrue periodically, to the extent of a pro rata portion through the date of death of any additional vesting rights that would have accrued on the next vesting date had the Participant not died. The proration shall be based upon the number of days accrued in the current vesting period prior to the Participant's date of death.

(b) If the Participant's Survivors wish to exercise the Option, they must take all necessary steps to exercise the Option within one year after the date of death of such Participant, notwithstanding that the decedent might have been able to exercise the Option as to some or all of the Shares on a later date if he or she had not died and had continued to be an Employee, director or Consultant or, if earlier, within the originally prescribed term of the Option.

17. EFFECT OF TERMINATION OF SERVICE ON UNACCEPTED STOCK GRANTS AND STOCK-BASED AWARDS.

In the event of a termination of service (whether as an Employee, director or Consultant) with the Company or an Affiliate for any reason before the Participant has accepted a Stock Grant or a Stock-Based Award and paid the purchase price, if required at the time, such grant shall terminate.

For purposes of this Paragraph 17 and Paragraph 18 below, a Participant to whom a Stock Grant or a Stock-Based Award has been issued under the Plan who is absent from work with the Company or with an Affiliate because of temporary disability (any disability other than a Disability as defined in Paragraph 1 hereof), or who is on leave of absence for any purpose, shall not, during the period of any such absence, be deemed, by virtue of such absence alone, to have terminated such Participant's employment, director status or consultancy with the Company or with an Affiliate, except as the Administrator may otherwise expressly provide.

In addition, for purposes of this Paragraph 17 and Paragraph 18 below, any change of employment or other service within or among the Company and any Affiliates shall not be treated as a termination of employment, director status or consultancy so long as the Participant continues to be an Employee, director or Consultant of the Company or any Affiliate.

18. EFFECT ON STOCK GRANTS AND STOCK-BASED AWARDS OF TERMINATION OF SERVICE OTHER THAN FOR CAUSE OR DEATH OR DISABILITY.

Except as otherwise provided in a Participant's Stock Grant Agreement, in the event of a termination of service (whether as an Employee, director or Consultant), other than termination for Cause, Disability, or death for which events there are special rules in Paragraphs 19, 20, and 21, respectively, before all forfeiture provisions or Company rights of repurchase (other than rights to repurchase at then fair market value following termination of service as an Employee, director or Consultant) shall have lapsed, then the Company shall have the right to cancel or repurchase that number of Shares subject to a Stock Grant as to which the Company's forfeiture or repurchase rights have not lapsed.

19. EFFECT ON STOCK GRANTS AND STOCK-BASED AWARDS OF TERMINATION OF SERVICE FOR CAUSE.

Except as otherwise provided in a Participant's Stock Grant Agreement, the following rules apply if the Participant's service (whether as an Employee, director or Consultant) with the Company or an Affiliate is terminated for Cause:

(a) All Shares subject to any Stock Grant that remain subject to forfeiture provisions or as to which the Company shall have a repurchase right shall be immediately forfeited to the Company as of the time the Participant is notified his or her service is terminated for Cause.

(b) Cause is not limited to events which have occurred prior to a Participant's termination of service, nor is it necessary that the Administrator's finding of Cause occur prior to termination. If the Administrator determines, subsequent to a Participant's termination of service, that either prior or subsequent to the Participant's termination the Participant engaged in conduct which would constitute Cause, then all Shares subject to any Stock Grant that remained subject to forfeiture provisions or as to which the Company had a repurchase right on the date of termination shall be immediately forfeited to the Company.

20. EFFECT ON STOCK GRANTS AND STOCK-BASED AWARDS OF TERMINATION OF SERVICE FOR DISABILITY.

Except as otherwise provided in a Participant's Stock Grant Agreement, the following rules apply if a Participant ceases to be an Employee, director or Consultant of the Company or of an Affiliate by reason of Disability: to the extent the forfeiture provisions or the Company's rights of repurchase have not lapsed on the date of Disability, they shall be exercisable; provided, however, that in the event such forfeiture provisions or rights of repurchase lapse periodically, such provisions or rights shall lapse to the extent of a pro rata portion of the Shares subject to such Stock Grant through the date of Disability as would have lapsed had the Participant not become Disabled. The proration shall be based upon the number of days accrued prior to the date of Disability.

The Administrator shall make the determination both as to whether Disability has occurred and the date of its occurrence (unless a procedure for such determination is set forth in another agreement between the Company and such Participant, in which case such procedure shall be used for such determination). If requested, the Participant shall be examined by a physician selected or approved by the Administrator, the cost of which examination shall be paid for by the Company.

21. EFFECT ON STOCK GRANTS OF DEATH WHILE AN EMPLOYEE, DIRECTOR OR CONSULTANT.

Except as otherwise provided in a Participant's Stock Grant Agreement, the following rules apply in the event of the death of a Participant while the Participant is an Employee, director or Consultant of the Company or of an Affiliate: to the extent the forfeiture provisions or the Company's rights of repurchase have not lapsed on the date of death, they shall be exercisable; provided, however, that in the event such forfeiture provisions or rights of repurchase lapse periodically, such provisions or rights shall lapse to the extent of a pro rata portion of the Shares subject to such Stock Grant through the date of death as would have lapsed had the Participant not died. The proration shall be based upon the number of days accrued prior to the Participant's date of death.

22. PURCHASE FOR INVESTMENT.

Unless the offering and sale of the Shares shall have been effectively registered under the Securities Act, the Company shall be under no obligation to issue Shares under the Plan unless and until the following conditions have been fulfilled:

(a) The person who receives a Stock Right shall warrant to the Company, prior to the receipt of Shares, that such person is acquiring such Shares for his or her own account, for investment, and not with a view to, or for sale in connection with, the distribution of any such Shares, in which event the person acquiring such Shares shall be bound by the provisions of the following legend (or a legend in substantially similar form) which shall be endorsed upon the certificate evidencing the Shares issued pursuant to such exercise or such grant:

> "The shares represented by this certificate have been taken for investment and they may not be sold or otherwise transferred by any person, including a pledgee, unless (1) either (a) a Registration Statement with respect to such shares shall be effective under the Securities Act of 1933, as amended, or (b) the Company shall have received an opinion of counsel satisfactory to it that an exemption from registration under such Act is then available, and (2) there shall have been compliance with all applicable state securities laws."

(b) At the discretion of the Administrator, the Company shall have received an opinion of its counsel that the Shares may be issued in compliance with the Securities Act without registration thereunder.

23. DISSOLUTION OR LIQUIDATION OF THE COMPANY.

Upon the dissolution or liquidation of the Company, all Options granted under this Plan which as of such date shall not have been exercised and all Stock Grants and Stock-Based Awards which have not been accepted, to the extent required under the applicable Agreement, will terminate and become null and void; provided, however, that if the rights of a Participant or a Participant's Survivors have not otherwise terminated and expired, the Participant or the Participant's Survivors will have the right immediately prior to such dissolution or liquidation to exercise or accept any Stock Right to the extent that the Stock Right is exercisable or subject to acceptance as of the date immediately prior to such dissolution or liquidation. Upon the dissolution or liquidation of the Company, any outstanding Stock-Based Awards shall immediately terminate unless otherwise determined by the Administrator or specifically provided in the applicable Agreement.

24. ADJUSTMENTS.

Upon the occurrence of any of the following events, a Participant's rights with respect to any Stock Right granted to him or her hereunder shall be adjusted as hereinafter provided, unless otherwise specifically provided in a Participant's Agreement:

(a) Stock Dividends and Stock Splits. If (i) the shares of Common Stock shall be subdivided or combined into a greater or smaller number of shares or if the Company shall issue any shares of Common Stock as a stock dividend on its outstanding Common Stock, or (ii) additional shares or new or different shares or other securities of the Company or other non-cash assets are distributed with respect to such shares of Common Stock, each Stock Right and the number of shares of Common Stock deliverable thereunder shall be appropriately increased or decreased proportionately, and appropriate adjustments shall be made including, in the exercise or purchase price per share, to reflect such events. The number of Shares subject to the limitations in Paragraphs 3(a) and 4(c) shall also be proportionately adjusted upon the occurrence of such events.

(b) Corporate Transactions. If the Company is to be consolidated with or acquired by another entity in a merger, consolidation, sale of all or substantially all of the Company's assets or the acquisition of all of the outstanding voting stock of the Company in a single transaction or a series of related transactions other than a transaction to merely change the state of incorporation (a "Corporate Transaction"), the Administrator or the board of directors of any entity assuming the obligations of the Company hereunder (the "Successor Board"), shall, as to outstanding Options, either (i) make appropriate provision for the continuation of such Options by substituting on an equitable basis for the Shares then subject to such Options either the consideration payable with respect to the outstanding shares of Common Stock in connection with the Corporate Transaction or securities of any successor or acquiring entity; or (ii) upon written notice to the Participants, provide that such Options must be exercised (either (A) to the extent then exercisable or, (B) at the discretion of the Administrator, any such Options being made partially or fully exercisable for purposes of this Subparagraph), within a specified number of days of the date of such notice, at the end of which period such Options which have not been exercised shall terminate; or (iii) terminate such Options in exchange for payment of an amount equal to the consideration payable upon consummation of such Corporate Transaction to a holder

of the number of shares of Common Stock into which such Option would have been exercisable (either (A) to the extent then exercisable or, (B) at the discretion of the Administrator, any such Options being made partially or fully exercisable for purposes of this Subparagraph) less the aggregate exercise price thereof. For purposes of determining the payments to be made pursuant to Subclause (iii) above, in the case of a Corporate Transaction the consideration for which, in whole or in part, is other than cash, the consideration other than cash shall be valued at the fair value thereof as determined in good faith by the Board of Directors.

With respect to outstanding Stock Grants, the Administrator or the Successor Board, shall make appropriate provision for the continuation of such Stock Grants on the same terms and conditions by substituting on an equitable basis for the Shares then subject to such Stock Grants either the consideration payable with respect to the outstanding Shares of Common Stock in connection with the Corporate Transaction or securities of any successor or acquiring entity. In lieu of the foregoing, in connection with any Corporate Transaction, the Administrator may provide that, upon consummation of the Corporate Transaction, each outstanding Stock Grant shall be terminated in exchange for payment of an amount equal to the consideration payable upon consummation of such Corporate Transaction to a holder of the number of shares of Common Stock comprising such Stock Grant (to the extent such Stock Grant is no longer subject to any forfeiture or repurchase rights then in effect or, at the discretion of the Administrator, all forfeiture and repurchase rights being waived upon such Corporate Transaction). For purposes of determining such payments, in the case of a Corporate Transaction the consideration for which, in whole or in part, is other than cash, the consideration other than cash shall be valued at the fair value thereof as determined in good faith by the Board of Directors.

In taking any of the actions permitted under this Paragraph 24(b), the Administrator shall not be obligated by the Plan to treat all Stock Rights, all Stock Rights held by a Participant, or all Stock Rights of the same type, identically.

(c) Recapitalization or Reorganization. In the event of a recapitalization or reorganization of the Company other than a Corporate Transaction pursuant to which securities of the Company or of another corporation, limited liability company or other entity are issued with respect to the outstanding shares of Common Stock, a Participant upon exercising an Option or accepting a Stock Grant after the recapitalization or reorganization shall be entitled to receive for the price paid upon such exercise or acceptance if any, the number of replacement securities which would have been received if such Option had been exercised or Stock Grant accepted prior to such recapitalization or reorganization.

(d) Adjustments to Stock-Based Awards. Upon the happening of any of the events described in Subparagraphs (a), (b) or (c) above, any outstanding Stock-Based Award shall be appropriately adjusted to reflect the events described in such Subparagraphs. The Administrator or the Successor board shall determine the specific adjustments to be made under Paragraph 24, including, but not limited to, the effect of any Corporate Transaction and, subject to Paragraph 4, its determination shall be conclusive.

(e) Modification of Options. Notwithstanding the foregoing, any adjustments made pursuant to Subparagraph (a), (b) or (c) above with respect to Options shall be made only after the Administrator determines whether such adjustments would (i) constitute a “modification” of

any ISOs (as that term is defined in Section 424(h) of the Code) or (ii) cause any adverse tax consequences for the holders of Options, including, but not limited to, pursuant to Section 409A of the Code. If the Administrator determines that such adjustments made with respect to Options would constitute a modification or other adverse tax consequence, it may in its discretion refrain from making such adjustments, unless the holder of an Option specifically agrees in writing that such adjustment be made and such writing indicates that the holder has full knowledge of the consequences of such "modification" on his or her income tax treatment with respect to the Option. This paragraph shall not apply to the acceleration of the vesting of any ISO that would cause any portion of the ISO to violate the annual vesting limitation contained in Section 422(d) of the Code, as described in Paragraph 6(b)(iv).

25. ISSUANCES OF SECURITIES.

Except as expressly provided herein, no issuance by the Company of shares of stock of any class, or securities convertible into shares of stock of any class, shall affect, and no adjustment by reason thereof shall be made with respect to, the number or price of shares subject to Stock Rights. Except as expressly provided herein, no adjustments shall be made for dividends paid in cash or in property (including without limitation, securities) of the Company prior to any issuance of Shares pursuant to a Stock Right.

26. FRACTIONAL SHARES.

No fractional shares shall be issued under the Plan and the person exercising a Stock Right shall receive from the Company cash in lieu of such fractional shares equal to the Fair Market Value thereof.

27. CONVERSION OF ISOs INTO NON-QUALIFIED OPTIONS; TERMINATION OF ISOs.

The Administrator, at the written request of any Participant, may in its discretion take such actions as may be necessary to convert such Participant's ISOs (or any portions thereof) that have not been exercised on the date of conversion into Non-Qualified Options at any time prior to the expiration of such ISOs, regardless of whether the Participant is an Employee of the Company or an Affiliate at the time of such conversion. At the time of such conversion, the Administrator (with the consent of the Participant) may impose such conditions on the exercise of the resulting Non-Qualified Options as the Administrator in its discretion may determine, provided that such conditions shall not be inconsistent with this Plan. Nothing in the Plan shall be deemed to give any Participant the right to have such Participant's ISOs converted into Non-Qualified Options, and no such conversion shall occur until and unless the Administrator takes appropriate action. The Administrator, with the consent of the Participant, may also terminate any portion of any ISO that has not been exercised at the time of such conversion.

28. WITHHOLDING.

In the event that any federal, state, or local income taxes, employment taxes, Federal Insurance Contributions Act ("F.I.C.A.") withholdings or other amounts are required by applicable law or governmental regulation to be withheld from the Participant's salary, wages or other remuneration in connection with the issuance of a Stock Right or Shares under the Plan or

upon the lapsing of any forfeiture provision or right of repurchase or for any other reason required by law, the Company may withhold from the Participant's compensation, if any, or may require that the Participant advance in cash to the Company, or to any Affiliate of the Company which employs or employed the Participant, the statutory minimum amount of such withholdings unless a different withholding arrangement, including the use of shares of the Company's Common Stock or a promissory note, is authorized by the Administrator (and permitted by law). For purposes hereof, the fair market value of the shares withheld for purposes of payroll withholding shall be determined in the manner set forth under the definition of Fair Market Value provided in Paragraph 1 above, as of the most recent practicable date prior to the date of exercise. If the Fair Market Value of the shares withheld is less than the amount of payroll withholdings required, the Participant may be required to advance the difference in cash to the Company or the Affiliate employer. The Administrator in its discretion may condition the exercise of an Option for less than the then Fair Market Value on the Participant's payment of such additional withholding.

29. NOTICE TO COMPANY OF DISQUALIFYING DISPOSITION.

Each Employee who receives an ISO shall notify the Company in writing immediately after the Employee makes a Disqualifying Disposition of any Shares acquired pursuant to the exercise of an ISO. A Disqualifying Disposition is defined in Section 424(c) of the Code and includes any disposition (including any sale or gift) of such Shares before the later of (a) two years after the date the Employee was granted the ISO, or (b) one year after the date the Employee acquired Shares by exercising the ISO, except as otherwise provided in Section 424(c) of the Code. If the Employee has died before such Shares are sold, these holding period requirements do not apply and no Disqualifying Disposition can occur thereafter.

30. TERMINATION OF THE PLAN.

The Plan will terminate on May 15, 2027, the date which is ten years from the earlier of the date of its adoption by the Board of Directors and the date of its approval by the shareholders of the Company. The Plan may be terminated at an earlier date by vote of the shareholders or the Board of Directors of the Company; provided, however, that any such earlier termination shall not affect any Agreements executed prior to the effective date of such termination. Termination of the Plan shall not affect any Stock Rights theretofore granted.

31. AMENDMENT OF THE PLAN AND AGREEMENTS.

The Plan may be amended by the shareholders of the Company. The Plan may also be amended by the Administrator, including, without limitation, to the extent necessary to qualify any or all outstanding Stock Rights granted under the Plan or Stock Rights to be granted under the Plan for favorable federal income tax treatment as may be afforded incentive stock options under Section 422 of the Code (including deferral of taxation upon exercise), and to the extent necessary to qualify the Shares issuable under the Plan for listing on any national securities exchange or quotation in any national automated quotation system of securities dealers. Any amendment approved by the Administrator which the Administrator determines is of a scope that requires shareholder approval shall be subject to obtaining such shareholder approval. Any modification or amendment of the Plan shall not, without the consent of a Participant, adversely

affect his or her rights under a Stock Right previously granted to him or her. With the consent of the Participant affected, the Administrator may amend outstanding Agreements in a manner which may be adverse to the Participant but which is not inconsistent with the Plan. In the discretion of the Administrator, outstanding Agreements may be amended by the Administrator in a manner which is not adverse to the Participant.

32. EMPLOYMENT OR OTHER RELATIONSHIP.

Nothing in this Plan or any Agreement shall be deemed to prevent the Company or an Affiliate from terminating the employment, consultancy or director status of a Participant, nor to prevent a Participant from terminating his or her own employment, consultancy or director status or to give any Participant a right to be retained in employment or other service by the Company or any Affiliate for any period of time.

33. GOVERNING LAW.

This Plan shall be construed and enforced in accordance with the law of the State of Delaware.

Exhibit 10.17

Option No._____

SYNLOGIC, INC.

Stock Option Grant Notice

Stock Option Grant under the Company's 2017 Stock Incentive Plan

1. Name and Address of Participant: _____
2. Date of Option Grant: _____
3. Type of Grant: _____
4. Maximum Number of Shares for which this Option is exercisable: _____
5. Exercise (purchase) price per share: _____
6. Option Expiration Date: _____
7. Vesting Start Date: _____
8. Vesting Schedule:

[Notwithstanding the foregoing, in the event of a Change of Control (as defined below), while the Participant is an Employee, director or Consultant of the Company or an Affiliate, [ ]% of the Shares which would have vested in each vesting installment remaining under this Option will be vested and exercisable for purposes of Paragraph 24(b) of the Plan unless this Option has otherwise expired or been terminated pursuant to its terms or the terms of the Plan.

Change of Control means the occurrence of any of the following events:

(i) Ownership. Any "Person" (as such term is used in Sections 13(d) and 14(d) of the Securities Exchange Act of 1934, as amended) becomes the "Beneficial Owner" (as defined in Rule 13d-3 under said Act), directly or indirectly, of securities of the Company representing 50% or more of the total voting power represented by the Company's then outstanding voting securities (excluding for this purpose any such voting securities held by the Company or its Affiliates or any employee benefit plan of the Company) pursuant to a transaction or a series of related transactions which the Board of Directors does not approve; or

(ii) Merger/Sale of Assets. (A) A merger or consolidation of the Company whether or not approved by the Board of Directors, other than a merger or consolidation which would result in the voting securities of the Company outstanding immediately prior thereto continuing to represent (either by remaining outstanding or by being converted into voting securities of the surviving entity or the parent of such corporation) more than 50% of the total voting power represented by the voting securities of the Company or such surviving entity or parent of such entity, as the case may be, outstanding immediately after such merger or consolidation; or (B) the sale or disposition by the Company of all or substantially all of the Company's assets in a transaction requiring stockholder approval; or

(iii) Change in Board Composition. A change in the composition of the Board of Directors, as a result of which fewer than a majority of the directors are Incumbent Directors. "Incumbent Directors" shall mean directors who either (A) are directors of the Company as of [ ], 20[ ], or (B) are elected, or nominated for election, to the Board of Directors with the affirmative votes of at least a majority of the Incumbent Directors at the time of such election or nomination (but shall not include an individual whose election or nomination is in connection with an actual or threatened proxy contest relating to the election of directors to the Company).

(iv) "Change of Control" shall be interpreted, if applicable, in a manner, and limited to the extent necessary, so that it will not cause adverse tax consequences under Section 409A of the Code.]

The vesting is further subject to the other terms and conditions of this Agreement and the Company's 2017 Stock Incentive Plan.

[Remainder of page intentionally left blank]

The Company and the Participant acknowledge receipt of this Stock Option Grant Notice and agree to the terms of the Stock Option Agreement attached hereto and incorporated by reference herein, the Company's 2017 Stock Incentive Plan and the terms of this Option Grant as set forth above.

SYNLOGIC, INC.

By: _____

Name: _____

Title: _____

_____

Participant

SYNLOGIC, INC.

STOCK OPTION AGREEMENT- INCORPORATED TERMS AND CONDITIONS

AGREEMENT made as of the date of grant set forth in the Stock Option Grant Notice by and between Synlogic, Inc. (the "Company"), a Delaware corporation, and the individual whose name appears on the Stock Option Grant Notice (the "Participant").

WHEREAS, the Company desires to grant to the Participant an Option to purchase shares of its common stock, $0.0001 par value per share (the "Shares"), under and for the purposes set forth in the Company's 2017 Stock Incentive Plan (the "Plan");

WHEREAS, the Company and the Participant understand and agree that any terms used and not defined herein have the same meanings as in the Plan; and

WHEREAS, the Company and the Participant each intend that the Option granted herein shall be of the type set forth in the Stock Option Grant Notice.

NOW, THEREFORE, in consideration of the mutual covenants hereinafter set forth and for other good and valuable consideration, the parties hereto agree as follows:

1. GRANT OF OPTION.

The Company hereby grants to the Participant the right and option to purchase all or any part of an aggregate of the number of Shares set forth in the Stock Option Grant Notice, on the terms and conditions and subject to all the limitations set forth herein, under United States securities and tax laws, and in the Plan, which is incorporated herein by reference. The Participant acknowledges receipt of a copy of the Plan.

2. EXERCISE PRICE.

The exercise price of the Shares covered by the Option shall be the amount per Share set forth in the Stock Option Grant Notice, subject to adjustment, as provided in the Plan, in the event of a stock split, reverse stock split or other events affecting the holders of Shares after the date hereof (the "Exercise Price"). Payment shall be made in accordance with Paragraph 9 of the Plan.

3. EXERCISABILITY OF OPTION.

Subject to the terms and conditions set forth in this Agreement and the Plan, the Option granted hereby shall become vested and exercisable as set forth in the Stock Option Grant Notice and is subject to the other terms and conditions of this Agreement and the Plan.

4. TERM OF OPTION.

This Option shall terminate on the Option Expiration Date as specified in the Stock Option Grant Notice and, if this Option is designated in the Stock Option Grant Notice as an ISO and the Participant owns as of the date hereof more than 10% of the total combined voting power of all classes of capital stock of the Company or an Affiliate, such date may not be more than five years from the date of this Agreement, but shall be subject to earlier termination as provided herein or in the Plan.

If the Participant ceases to be an Employee, director or Consultant of the Company or of an Affiliate for any reason other than the death or Disability of the Participant, or termination of the Participant for Cause (the "Termination Date"), the Option to the extent then vested and exercisable pursuant to Section 3 hereof as of the Termination Date, and not previously terminated in accordance with this Agreement, may be exercised within three (3) months after the Termination Date, or on or prior to the Option Expiration Date as specified in the Stock Option Grant Notice, whichever is earlier, but may not be exercised thereafter except as set forth below. In such event, the unvested portion of the Option shall not be exercisable and shall expire and be cancelled on the Termination Date.

If this Option is designated in the Stock Option Grant Notice as an ISO and the Participant ceases to be an Employee of the Company or of an Affiliate but continues after termination of employment to provide service to the Company or an Affiliate as a director or Consultant, this Option shall continue to vest in accordance with Section 3 above as if this Option had not terminated until the Participant is no longer providing services to the Company. In such case, this Option shall automatically convert and be deemed a Non-Qualified Option as of the date that is three (3) months from termination of the Participant's employment and this Option shall continue on the same terms and conditions set forth herein until such Participant is no longer providing service to the Company or an Affiliate.

Notwithstanding the foregoing, in the event of the Participant's Disability or death within three (3) months after the Termination Date, the Participant or the Participant's Survivors may exercise the Option within one (1) year after the Termination Date, but in no event after the Option Expiration Date as specified in the Stock Option Grant Notice, and this Option shall thereupon terminate.

In the event the Participant's service is terminated by the Company or an Affiliate for Cause, the Participant's right to exercise any unexercised portion of this Option even if vested shall cease immediately as of the time the Participant is notified his or her service is terminated for Cause, and this Option shall thereupon terminate. Notwithstanding anything herein to the contrary, if subsequent to the Participant's termination, but prior to the exercise of the Option, the Administrator determines that, either prior or subsequent to the Participant's termination, the Participant engaged in conduct which would constitute Cause, then the Participant shall immediately cease to have any right to exercise the Option and this Option shall thereupon terminate.

In the event of the Disability of the Participant while an Employee, director or Consultant of the Company or of an Affiliate, as determined in accordance with the Plan, the Option shall be exercisable within one (1) year after the Participant's termination of service due to Disability or, if earlier, on or prior to the Option Expiration Date as specified in the Stock Option Grant Notice. In such event, the Option shall be exercisable:

(a) to the extent that the Option has become exercisable but has not been exercised as of the date of the Participant's termination of service due to Disability; and

(b) in the event rights to exercise the Option accrue periodically, to the extent of a pro rata portion through the date of the Participant's termination of service due to Disability of any additional vesting rights that would have accrued on the next vesting date had the Participant not become Disabled. The proration shall be based upon the number of days accrued in the current vesting period prior to the date of the Participant's termination of service due to Disability.

In the event of the death of the Participant while an Employee, director or Consultant of the Company or of an Affiliate, the Option shall be exercisable by the Participant's Survivors within one year after the date of death of the Participant or, if earlier, on or prior to the Option Expiration Date as specified in the Stock Option Grant Notice. In such event, the Option shall be exercisable:

(x) to the extent that the Option has become exercisable but has not been exercised as of the date of death; and

(y) in the event rights to exercise the Option accrue periodically, to the extent of a pro rata portion through the date of death of any additional vesting rights that would have accrued on the next vesting date had the Participant not died. The proration shall be based upon the number of days accrued in the current vesting period prior to the Participant's date of death.

5. METHOD OF EXERCISING OPTION.

Subject to the terms and conditions of this Agreement, the Option may be exercised by written notice to the Company or its designee, in substantially the form of Exhibit A attached hereto (or in such other form acceptable to the Company, which may include electronic notice). Such notice shall state the number of Shares with respect to which the Option is being exercised and shall be signed by the person exercising the Option (which signature may be provided electronically in a form acceptable to the Company). Payment of the Exercise Price for such Shares shall be made in accordance with Paragraph 9 of the Plan. The Company shall deliver such Shares as soon as practicable after the notice shall be received, provided, however, that the Company may delay issuance of such Shares until completion of any action or obtaining of any consent, which the Company deems necessary under any applicable law (including, without limitation, state securities or "blue sky" laws). The Shares as to which the Option shall

have been so exercised shall be registered in the Company's share register in the name of the person so exercising the Option (or, if the Option shall be exercised by the Participant and if the Participant shall so request in the notice exercising the Option, shall be registered in the Company's share register in the name of the Participant and another person jointly, with right of survivorship) and shall be delivered as provided above to or upon the written order of the person exercising the Option. In the event the Option shall be exercised, pursuant to Section 4 hereof, by any person other than the Participant, such notice shall be accompanied by appropriate proof of the right of such person to exercise the Option. All Shares that shall be purchased upon the exercise of the Option as provided herein shall be fully paid and nonassessable.

6. PARTIAL EXERCISE.

Exercise of this Option to the extent above stated may be made in part at any time and from time to time within the above limits, except that no fractional share shall be issued pursuant to this Option.

7. NON-ASSIGNABILITY.

The Option shall not be transferable by the Participant otherwise than by will or by the laws of descent and distribution. If this Option is a Non-Qualified Option then it may also be transferred pursuant to a qualified domestic relations order as defined by the Code or Title I of the Employee Retirement Income Security Act or the rules thereunder. Except as provided above in this paragraph, the Option shall be exercisable, during the Participant's lifetime, only by the Participant (or, in the event of legal incapacity or incompetency, by the Participant's guardian or representative) and shall not be assigned, pledged or hypothecated in any way (whether by operation of law or otherwise) and shall not be subject to execution, attachment or similar process. Any attempted transfer, assignment, pledge, hypothecation or other disposition of the Option or of any rights granted hereunder contrary to the provisions of this Section 7, or the levy of any attachment or similar process upon the Option shall be null and void.

8. NO RIGHTS AS STOCKHOLDER UNTIL EXERCISE.

The Participant shall have no rights as a stockholder with respect to Shares subject to this Agreement until registration of the Shares in the Company's share register in the name of the Participant. Except as is expressly provided in the Plan with respect to certain changes in the capitalization of the Company, no adjustment shall be made for dividends or similar rights for which the record date is prior to the date of such registration.

9. ADJUSTMENTS.

The Plan contains provisions covering the treatment of Options in a number of contingencies such as stock splits and mergers. Provisions in the Plan for adjustment with respect to stock subject to Options and the related provisions with respect to successors to the business of the Company are hereby made applicable hereunder and are incorporated herein by reference.

10. TAXES.

The Participant acknowledges and agrees that (i) any income or other taxes due from the Participant with respect to this Option or the Shares issuable upon exercise of this Option shall be the Participant's responsibility; (ii) the Participant was free to use professional advisors of his or her choice in connection with this Agreement, has received advice from his or her professional advisors in connection with this Agreement, understands its meaning and import, and is entering into this Agreement freely and without coercion or duress; (iii) the Participant has not received and is not relying upon any advice, representations or assurances made by or on behalf of the Company or any Affiliate or any Employee of or counsel to the Company or any Affiliate regarding any tax or other effects or implications of the Option, the Shares or other matters contemplated by this Agreement and (iv) neither the Administrator, the Company, its Affiliates, nor any of its officers or directors, shall be held liable for any applicable costs, taxes, or penalties associated with the Option if, in fact, the Internal Revenue Service were to determine that the Option constitutes deferred compensation under Section 409A of the Code.

If this Option is designated in the Stock Option Grant Notice as a Non-Qualified Option or if the Option is an ISO and is converted into a Non-Qualified Option and such Non-Qualified Option is exercised, the Participant agrees that the Company may withhold from the Participant's remuneration, if any, the minimum statutory amount of federal, state and local withholding taxes attributable to such amount that is considered compensation includable in such person's gross income. At the Company's discretion, the amount required to be withheld may be withheld in cash from such remuneration, or in kind from the Shares otherwise deliverable to the Participant on exercise of the Option. The Participant further agrees that, if the Company does not withhold an amount from the Participant's remuneration sufficient to satisfy the Company's income tax withholding obligation, the Participant will reimburse the Company on demand, in cash, for the amount under-withheld.

11. PURCHASE FOR INVESTMENT.

Unless the offering and sale of the Shares to be issued upon the particular exercise of the Option shall have been effectively registered under the Securities Act of 1933, as now in force or hereafter amended (the "1933 Act"), the Company shall be under no obligation to issue the Shares covered by such exercise unless the Company has determined that such exercise and issuance would be exempt from the registration requirements of the 1933 Act and until the following conditions have been fulfilled:

(a) The person(s) who exercise the Option shall warrant to the Company, at the time of such exercise, that such person(s) are acquiring such Shares for their own respective accounts, for investment, and not with a view to, or for sale in connection with, the distribution of any such Shares, in which event the person(s) acquiring such Shares shall be bound by the provisions of the following legend which shall be endorsed upon any certificate(s) evidencing the Shares issued pursuant to such exercise:

"The shares represented by this certificate have been taken for investment and they may not be sold or otherwise transferred by any person, including a pledgee, unless (1) either (a) a Registration Statement with respect to such shares shall be effective under the Securities Act of 1933, as amended, or (b) the Company shall have received an opinion of counsel satisfactory to it that an exemption from registration under such Act is then available, and (2) there shall have been compliance with all applicable state securities laws;" and

(b) If the Company so requires, the Company shall have received an opinion of its counsel that the Shares may be issued upon such particular exercise in compliance with the 1933 Act without registration thereunder. Without limiting the generality of the foregoing, the Company may delay issuance of the Shares until completion of any action or obtaining of any consent, which the Company deems necessary under any applicable law (including without limitation state securities or "blue sky" laws).

12. RESTRICTIONS ON TRANSFER OF SHARES.

12.1 The Shares acquired by the Participant pursuant to the exercise of the Option granted hereby shall not be transferred by the Participant except as permitted herein.

12.2 [Intentionally Omitted]

12.3 It shall be a condition precedent to the validity of any sale or other transfer of any Shares by the Participant that the following restrictions be complied with (except as otherwise provided in this Section 12):

(i) No Shares owned by the Participant may be sold, pledged or otherwise transferred (including by gift or devise) to any person or entity, voluntarily, or by operation of law, except in accordance with the terms and conditions hereinafter set forth.

(ii) Before selling or otherwise transferring all or part of the Shares, the Participant shall give written notice of such intention to the Company, which notice shall include the name of the proposed transferee, the proposed purchase price per share, the terms of payment of such purchase price and all other matters relating to such sale or transfer and shall be accompanied by a copy of the binding written agreement of the proposed transferee to purchase the Shares of the Participant. Such notice shall constitute a binding offer by the Participant to sell to the Company such number of the Shares then held by the Participant as are proposed to be sold in the notice at the monetary price per share designated in such notice, payable on the terms offered to the Participant by the proposed transferee (provided, however, that the Company shall not be required to meet any non-monetary terms of the proposed transfer, including, without limitation, delivery of other securities in exchange for the Shares proposed to be sold). The Company shall give written notice to the Participant as to whether such offer has

been accepted in whole by the Company within sixty (60) days after its receipt of written notice from the Participant. The Company may only accept such offer in whole and may not accept such offer in part. Such acceptance notice shall fix a time, location and date for the Closing on such purchase ("Closing Date") which shall not be less than ten (10) nor more than sixty (60) days after the giving of the acceptance notice, provided, however, if any of the Shares to be sold pursuant to this Section 12.3 have been held by the Participant for less than six (6) months, then the Closing Date may be extended by the Company until no more than ten (10) days after such Shares have been held by the Participant for six (6) months if required under applicable accounting rules in effect at the time. The place for such Closing shall be at the Company's principal office. At such Closing, the Participant shall accept payment as set forth herein and shall deliver to the Company in exchange therefor certificates for the number of Shares stated in the notice accompanied by duly executed instruments of transfer.

(iii) If the Company shall fail to accept any such offer, the Participant shall be free to sell all, but not less than all, of the Shares set forth in his or her notice to the designated transferee at the price and terms designated in the Participant's notice, provided that (i) such sale is consummated within six (6) months after the giving of notice by the Participant to the Company as aforesaid, and (ii) the transferee first agrees in writing to be bound by the provisions of this Section 12 so that such transferee (and all subsequent transferees) shall thereafter only be permitted to sell or transfer the Shares in accordance with the terms hereof. After the expiration of such six (6) months, the provisions of this Section 12.3 shall again apply with respect to any proposed voluntary transfer of the Participant's Shares.

(iv) The restrictions on transfer contained in this Section 12.3 shall not apply to (a) transfers by the Participant to his or her spouse or children or to a trust for the benefit of his or her spouse or children, (b) transfers by the Participant to his or her guardian or conservator, and (c) transfers by the Participant, in the event of his or her death, to his or her executor(s) or administrator(s) or to trustee(s) under his or her will (collectively, "Permitted Transferees"); provided however, that in any such event the Shares so transferred in the hands of each such Permitted Transferee shall remain subject to this Agreement, and each such Permitted Transferee shall so acknowledge in writing as a condition precedent to the effectiveness of such transfer.

(v) The provisions of this Section 12.3 may be waived by the Company. Any such waiver may be unconditional or based upon such conditions as the Company may impose.

12.4 In the event that the Participant or his or her successor in interest fails to deliver the Shares to be repurchased by the Company under this Agreement, the Company may elect (a) to establish a segregated account in the amount of the repurchase price, such account to be turned over to the Participant or his or her successor in interest upon delivery of such Shares, and (b) immediately to take such action as is appropriate to transfer record title of such Shares from

the Participant to the Company and to treat the Participant and such Shares in all respects as if delivery of such Shares had been made as required by this Agreement. The Participant hereby irrevocably grants the Company a power of attorney which shall be coupled with an interest for the purpose of effectuating the preceding sentence.

12.5 If the Company shall pay a stock dividend or declare a stock split on or with respect to any of its Common Stock, or otherwise distribute securities of the Company to the holders of its Common Stock, the number of shares of stock or other securities of the Company issued with respect to the shares then subject to the restrictions contained in this Agreement shall be added to the Shares subject to the Company's rights to repurchase pursuant to this Agreement. If the Company shall distribute to its stockholders shares of stock of another corporation or equity in another entity, the shares of stock of such other corporation or equity in such other entity, distributed with respect to the Shares then subject to the restrictions contained in this Agreement, shall be added to the Shares subject to the Company's rights to repurchase pursuant to this Agreement.

12.6 If the outstanding shares of Common Stock of the Company shall be subdivided into a greater number of shares or combined into a smaller number of shares, or in the event of a reclassification of the outstanding shares of Common Stock of the Company, or if the Company shall be a party to a merger, consolidation or capital reorganization, there shall be substituted for the Shares then subject to the restrictions contained in this Agreement such amount and kind of securities as are issued in such subdivision, combination, reclassification, merger, consolidation or capital reorganization in respect of the Shares subject immediately prior thereto to the Company's rights to repurchase pursuant to this Agreement.

12.7 The Company shall not be required to transfer any Shares on its books which shall have been sold, assigned or otherwise transferred in violation of this Agreement, or to treat as owner of such Shares, or to accord the right to vote as such owner or to pay dividends to, any person or organization to which any such Shares shall have been so sold, assigned or otherwise transferred, in violation of this Agreement.

12.8 The provisions of Sections 12.1 and 12.3 shall terminate upon the effective date of the registration of the Shares pursuant to the Securities Exchange Act of 1934.

12.9 The Participant agrees that in the event the Company proposes to offer for sale to the public any of its equity securities and such Participant is requested by the Company and any underwriter engaged by the Company in connection with such offering to sign an agreement restricting the sale or other transfer of Shares, then it will promptly sign such agreement and will not transfer, whether in privately negotiated transactions or to the public in open market transactions or otherwise, any Shares or other securities of the Company held by him or her during such period as is determined by the Company and the underwriters, not to exceed 180 days following the closing of the offering, plus such additional period of time as may be required to comply with FINRA Rules or similar rules promulgated by another regulatory authority (such period, the "Lock-Up Period"). Such agreement shall be in writing and in form and substance reasonably satisfactory to the Company and such underwriter and pursuant to customary and prevailing terms and conditions. Notwithstanding whether the Participant has signed such an agreement, the Company may impose stop-transfer instructions with respect to the Shares or other securities of the Company subject to the foregoing restrictions until the end of the Lock-Up Period.

12.10 In the event that the Initiating Holders (as defined below) approve a Sale of the Company (as defined below) then the Participant hereby agrees with respect to the Shares and any other shares of Common Stock that the Participant holds and any other Company securities over which the Participant otherwise exercises dispositive power (the "Drag Along"):

(i) in the event such transaction requires the approval of stockholders, (1) if the matter is to be brought to a vote at a stockholder meeting, after receiving proper notice of any meeting of stockholders of the Company to vote on the approval of a Sale of the Company, to be present, in person or by proxy, as a holder of Shares, at all such meetings and be counted for the purposes of determining the presence of a quorum at such meetings; and (2) to vote (in person, by proxy or by action by written consent, as applicable) all Shares in favor of such Sale of the Company and in opposition of any and all other proposals that could reasonably be expected to delay or impair the ability of the Company to consummate such Sale of the Company;

(ii) to refrain from exercising any dissenters' rights or rights of appraisal under applicable law at any time with respect to such Sale of the Company; and

(iii) to execute and deliver all related documentation and take such other action in support of the Sale of the Company as shall reasonably be requested by the Company.

As used herein, the following terms shall have the following respective meanings:

"Initiating Holders" means Persons holding not less than 50.1% of the shares of Common Stock of the Company then outstanding, determined on an as-converted basis (and including, for this purpose, any and all shares of Common Stock issued or issuable upon conversion of the Company's convertible preferred stock, but specifically excluding, for this purpose, any then outstanding options and warrants).

"Sale of the Company" means:

(i) a merger or consolidation in which (A) the Company is a constituent party or (B) a subsidiary of the Company is a constituent party and the Company issues shares of its capital stock pursuant to such merger or consolidation, except any such merger or consolidation involving the Company or a subsidiary in which the shares of capital stock of the Company outstanding immediately prior to such merger or consolidation continue to represent, or are converted into or exchanged for shares of capital stock that represent, immediately following such merger or consolidation, at least a majority, by voting power, of the capital stock of (1) the

surviving or resulting corporation or (2) if the surviving or resulting corporation is a wholly owned subsidiary of another corporation immediately following such merger or consolidation, the parent corporation of such surviving or resulting corporation (provided that, for the purpose of this clause (i) all shares of Common Stock issuable upon exercise of options or warrants outstanding immediately prior to such merger or consolidation or upon conversion of convertible securities immediately prior to such merger or consolidation shall be deemed to be outstanding immediately prior to such merger or consolidation and, if applicable, converted or exchanged in such merger or consolidation on the same terms as the actual outstanding shares of Common Stock are converted or exchanged);

(ii) any transaction or series of related transactions to which the Company is a party in which in excess of fifty percent (50%) of the Company's voting power is transferred such that the stockholders of the Company immediately prior to the transaction or series of related transactions do not own a majority of the voting power of the surviving or acquiring entity following such transaction or series of transactions; other than any transaction or series of transactions principally for bona fide equity financing purposes in which cash is received by the Company or any successor or indebtedness of the Company is cancelled or converted or a combination thereof; or

(iii) the sale, lease, transfer, exclusive license (other than an exclusive license that is approved by the Board of Directors), or other disposition, in a single transaction or series of related transactions, by the Company or any subsidiary of the Company of all or substantially all the assets of the Company and its subsidiaries taken as a whole, or the sale or disposition (whether by merger or otherwise) of one or more subsidiaries of the Company if substantially all of the assets of the Company and its subsidiaries taken as a whole are held by such subsidiary or subsidiaries, except where such sale, lease, transfer, exclusive license (other than an exclusive license that is approved by the Board of Directors) or other disposition is to a wholly owned subsidiary of the Company.

12.11 The Participant acknowledges and agrees that neither the Company, its shareholders nor its directors and officers, has any duty or obligation to disclose to the Participant any material information regarding the business of the Company or affecting the value of the Shares before, at the time of, or following a termination of the service of the Participant by the Company, including, without limitation, any information concerning plans for the Company to make a public offering of its securities or to be acquired by or merged with or into another firm or entity.

12.12 All certificates representing the Shares to be issued to the Participant pursuant to this Agreement shall have endorsed thereon a legend substantially as follows: "The shares represented by this certificate are subject to restrictions set forth in a Stock Option Agreement dated as of _____, a copy of which Agreement is available for inspection at the offices of the Company or will be made available upon request."

13. NO OBLIGATION TO MAINTAIN RELATIONSHIP.

The Participant acknowledges that: (i) the Company is not by the Plan or this Option Agreement obligated to continue the Participant as an Employee, director or Consultant of the Company or an Affiliate; (ii) the Plan is discretionary in nature and may be suspended or terminated by the Company at any time; (iii) the grant of the Option is a one-time benefit which does not create any contractual or other right to receive future grants of options, or benefits in lieu of options; (iv) all determinations with respect to any such future grants, including, but not limited to, the times when options shall be granted, the number of shares subject to each option, the option price, and the time or times when each option shall be exercisable, will be at the sole discretion of the Company; (v) the Participant's participation in the Plan is voluntary; (vi) the value of the Option is an extraordinary item of compensation which is outside the scope of the Participant's employment or consulting contract, if any; and (vii) the Option is not part of normal or expected compensation for purposes of calculating any severance, resignation, redundancy, end of service payments, bonuses, long-service awards, pension or retirement benefits or similar payments.

14. IF OPTION IS INTENDED TO BE AN ISO.

If this Option is designated in the Stock Option Grant Notice as an ISO so that the Participant (or the Participant's Survivors) may qualify for the favorable tax treatment provided to holders of Options that meet the standards of Section 422 of the Code then any provision of this Agreement or the Plan which conflicts with the Code so that this Option would not be deemed an ISO is null and void and any ambiguities shall be resolved so that the Option qualifies as an ISO. The Participant should consult with the Participant's own tax advisors regarding the tax effects of the Option and the requirements necessary to obtain favorable tax treatment under Section 422 of the Code, including, but not limited to, holding period requirements.

Notwithstanding the foregoing, to the extent that the Option is designated in the Stock Option Grant Notice as an ISO and is not deemed to be an ISO pursuant to Section 422(d) of the Code because the aggregate Fair Market Value (determined as of the Date of Option Grant) of any of the Shares with respect to which this ISO is granted becomes exercisable for the first time during any calendar year in excess of $100,000, the portion of the Option representing such excess value shall be treated as a Non-Qualified Option and the Participant shall be deemed to have taxable income measured by the difference between the then Fair Market Value of the Shares received upon exercise and the price paid for such Shares pursuant to this Agreement.

Neither the Company nor any Affiliate shall have any liability to the Participant, or any other party, if the Option (or any part thereof) that is intended to be an ISO is not an ISO or for any action taken by the Administrator, including without limitation the conversion of an ISO to a Non-Qualified Option.

15. NOTICE TO COMPANY OF DISQUALIFYING DISPOSITION OF AN ISO.

If this Option is designated in the Stock Option Grant Notice as an ISO then the Participant agrees to notify the Company in writing immediately after the Participant makes a

Disqualifying Disposition of any of the Shares acquired pursuant to the exercise of the ISO. A Disqualifying Disposition is defined in Section 424(c) of the Code and includes any disposition (including any sale) of such Shares before the later of (a) two years after the date the Participant was granted the ISO or (b) one year after the date the Participant acquired Shares by exercising the ISO, except as otherwise provided in Section 424(c) of the Code. If the Participant has died before the Shares are sold, these holding period requirements do not apply and no Disqualifying Disposition can occur thereafter.

16. NOTICES.

Any notices required or permitted by the terms of this Agreement or the Plan shall be given by recognized courier service, facsimile, registered or certified mail, return receipt requested, or by email addressed as follows:

If to the Company:

Synlogic, Inc.
200 Sidney Street
Cambridge, MA 02139
Attention: Chief Financial Officer

If to the Participant at the address set forth on the Stock Option Grant Notice or such address as the Company may then have in its records for the Participant or to such other address or addresses of which notice in the same manner has previously been given. Any such notice shall be deemed to have been given upon the earlier of receipt, one business day following delivery to a recognized courier service or three business days following mailing by registered or certified mail.

17. GOVERNING LAW.

This Agreement shall be governed by and construed in accordance with the laws of the State of Delaware, without giving effect to its internal principles governing the conflict of law. For the purpose of litigating any dispute that arises under this Agreement, the parties hereby consent to exclusive jurisdiction in the Commonwealth of Massachusetts and agree that such litigation shall be conducted in the state courts of Suffolk County, Massachusetts or the federal courts of the United States for the District of Massachusetts.

18. BENEFIT OF AGREEMENT.

Subject to the provisions of the Plan and the other provisions hereof, this Agreement shall be for the benefit of and shall be binding upon the heirs, executors, administrators, successors and assigns of the parties hereto.

19. ENTIRE AGREEMENT.

This Agreement, together with the Plan, embodies the entire agreement and understanding between the parties hereto with respect to the subject matter hereof and supersedes all prior oral or written agreements and understandings relating to the subject matter hereof. No statement, representation, warranty, covenant or agreement not expressly set forth in this Agreement shall affect or be used to interpret, change or restrict, the express terms and provisions of this Agreement, provided, however, in any event, this Agreement shall be subject to and governed by the Plan.

20. MODIFICATIONS AND AMENDMENTS.

The terms and provisions of this Agreement may be modified or amended as provided in the Plan.

21. WAIVERS AND CONSENTS.

Except as provided in the Plan, the terms and provisions of this Agreement may be waived, or consent for the departure therefrom granted, only by written document executed by the party entitled to the benefits of such terms or provisions. No such waiver or consent shall be deemed to be or shall constitute a waiver or consent with respect to any other terms or provisions of this Agreement, whether or not similar. Each such waiver or consent shall be effective only in the specific instance and for the purpose for which it was given, and shall not constitute a continuing waiver or consent.

22. DATA PRIVACY.

By entering into this Agreement, the Participant: (i) authorizes the Company and each Affiliate, and any agent of the Company or any Affiliate administering the Plan or providing Plan recordkeeping services, to disclose to the Company or any of its Affiliates such information and data as the Company or any such Affiliate shall request in order to facilitate the grant of options and the administration of the Plan; (ii) to the extent permitted by law waives any data privacy rights he or she may have with respect to such information; and (iii) authorizes the Company and each Affiliate to store and transmit such information in electronic form for the purposes set forth in this Agreement.

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Exhibit A

NOTICE OF EXERCISE OF STOCK OPTION

[Form for Unregistered Shares]

To: Synlogic, Inc.

Ladies and Gentlemen:

I hereby exercise my Stock Option to purchase _____ shares (the "Shares") of the common stock, $0.0001 par value, of Synlogic, Inc. (the "Company"), at the exercise price of $[ ] per share, pursuant to and subject to the terms of that certain Stock Option Agreement between the undersigned and the Company dated [ ], 20[ ].

I am aware that the Shares have not been registered under the Securities Act of 1933, as amended (the "1933 Act"), or any state securities laws. I understand that the reliance by the Company on exemptions under the 1933 Act is predicated in part upon the truth and accuracy of the statements by me in this Notice of Exercise.

I hereby represent and warrant that (1) I have been furnished with all information which I deem necessary to evaluate the merits and risks of the purchase of the Shares; (2) I have had the opportunity to ask questions concerning the Shares and the Company and all questions posed have been answered to my satisfaction; (3) I have been given the opportunity to obtain any additional information I deem necessary to verify the accuracy of any information obtained concerning the Shares and the Company; and (4) I have such knowledge and experience in financial and business matters that I am able to evaluate the merits and risks of purchasing the Shares and to make an informed investment decision relating thereto.

I hereby represent and warrant that I am purchasing the Shares for my own personal account for investment and not with a view to the sale or distribution of all or any part of the Shares.

I understand that because the Shares have not been registered under the 1933 Act, I must continue to bear the economic risk of the investment for an indefinite time and the Shares cannot be sold unless the Shares are subsequently registered under applicable federal and state securities laws or an exemption from such registration requirements is available.

I agree that I will in no event sell or distribute or otherwise dispose of all or any part of the Shares unless (1) there is an effective registration statement under the 1933 Act and applicable state securities laws covering any such transaction involving the Shares or (2) the Company receives an opinion of my legal counsel (concurred in by legal counsel for the Company) stating that such transaction is exempt from registration or the Company otherwise satisfies itself that such transaction is exempt from registration.

I consent to the placing of a legend on my certificate for the Shares stating that the Shares have not been registered and setting forth the restrictions on transfer contemplated hereby and to the placing of a stop transfer order on the books of the Company and with any transfer agents against the Shares until the Shares may be legally resold or distributed without restriction.

I understand that at the present time Rule 144 of the Securities and Exchange Commission (the "SEC") may not be relied on for the resale or distribution of the Shares by me. I understand that the Company has no obligation to me to register the sale of the Shares with the SEC and has not represented to me that it will register the sale of the Shares.

I understand the terms and restrictions on the right to dispose of the Shares set forth in the 2017 Stock Incentive Plan and the Stock Option Agreement, both of which I have carefully reviewed. I consent to the placing of a legend on my certificate for the Shares referring to such restriction and the placing of stop transfer orders until the Shares may be transferred in accordance with the terms of such restrictions.

I have considered the Federal, state and local income tax implications of the exercise of my Option and the purchase and subsequent sale of the Shares.

I am paying the option exercise price for the Shares as follows:

_____

Please issue the Shares (check one):

☐ to me; or

☐ to me and _____, as joint tenants with right of survivorship

and mail the certificate to me at the following address:

_____

_____

_____

My mailing address for shareholder communications, if different from the address listed above is:

_____

_____

_____

Very truly yours,

_____
Participant (signature)

_____
Print Name

_____
Date

_____
Social Security Number

Exhibit B

NOTICE OF EXERCISE OF STOCK OPTION

[Form for Shares Registered in the United States]

To: Synlogic, Inc.

IMPORTANT NOTICE: This form of Notice of Exercise may only be used at such time as the Company has filed a Registration Statement with the Securities and Exchange Commission under which the issuance of the Shares for which this exercise is being made is registered and such Registration Statement remains effective.

Ladies and Gentlemen:

I hereby exercise my Stock Option to purchase _____ shares (the "Shares") of the common stock, $0.0001 par value, of Synlogic, Inc. (the "Company"), at the exercise price of $_____ per share, pursuant to and subject to the terms of that Stock Option Grant Notice dated _____, 20[__].

I understand the nature of the investment I am making and the financial risks thereof. I am aware that it is my responsibility to have consulted with competent tax and legal advisors about the relevant national, state and local income tax and securities laws affecting the exercise of the Option and the purchase and subsequent sale of the Shares.

I am paying the option exercise price for the Shares as follows:

_____

Please issue the Shares (check one):

☐ to me; or

☐ to me and _____, as joint tenants with right of survivorship,

at the following address:

_____

_____

_____

My mailing address for shareholder communications, if different from the address listed above, is:

_____

_____

_____

Very truly yours,

_____
Participant (signature)

_____
Print Name

_____
Date

_____
Social Security Number

EXHIBIT 31.1

CERTIFICATION PURSUANT
TO RULES 13a-14(a) OR 15d-14(a) UNDER
THE SECURITIES EXCHANGE ACT OF 1934

I, Jose-Carlos Gutierrez-Ramos, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Synlogic, Inc. (the "registrant");

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) [paragraph omitted in accordance with Exchange Act Rule 13a-14]

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: November 13, 2017

/s/ JOSE CARLOS GUTIÉRREZ-RAMOS

Jose Carlos Gutiérrez-Ramos
President and Chief Executive Officer

EXHIBIT 31.2

CERTIFICATION PURSUANT
TO RULES 13a-14(a) OR 15d-14(a) UNDER
THE SECURITIES EXCHANGE ACT OF 1934

I, Todd Shegog, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Synlogic, Inc. (the "registrant");

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f))for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) [paragraph omitted in accordance with Exchange Act Rule 13a-14]

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: November 13, 2017

/s/ TODD SHEGOG
Todd Shegog
Chief Financial Officer

EXHIBIT 32.1

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report of Synlogic, Inc. (the "Company") on Form 10-Q for the period ended September 30, 2017 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Jose-Carlos Gutierrez-Ramos, President and Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, to my knowledge that:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ JOSE CARLOS GUTIÉRREZ-RAMOS
Jose Carlos Gutiérrez-Ramos
President and Chief Executive Officer
November 13, 2017

A signed original of this written statement required by Section 906 has been provided to the Company and will be retained by the Company and furnished to the Securities and Exchange Commission or its staff upon request.

EXHIBIT 32.2

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report of Synlogic, Inc. (the "Company") on Form 10-Q for the period ended September 30, 2017 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Todd Shegog, Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, to my knowledge that:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ TODD SHEGOG
Todd Shegog
Chief Financial Officer
November 13, 2017

A signed original of this written statement required by Section 906 has been provided to the Company and will be retained by the Company and furnished to the Securities and Exchange Commission or its staff upon request.