

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

**FORM S-8
REGISTRATION STATEMENT**
*UNDER
THE SECURITIES ACT OF 1933*

Synlogic, Inc.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

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

**301 Binney Street, Suite 402
Cambridge, MA 02142
(617) 401-9947**

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

**2015 Equity Incentive Award Plan
2017 Stock Incentive Plan**
(Full Title of the Plan)

**Jose Carlos Gutiérrez-Ramos
President & Chief Executive Officer**
Synlogic, Inc.

**301 Binney Street, Suite 402
Cambridge, MA 02142
(617) 401-9947**

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

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, indicated by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act.

CALCULATION OF REGISTRATION FEE

Title of Securities to be Registered	Amount to be Registered(1)	Proposed Maximum Offering Price Per Share(2)	Proposed Maximum Aggregate Offering Price(2)	Amount of Registration Fee
Common Stock, par value \$0.001 per share	1,113,630	\$9.99	\$11,125,163.70	\$1,385.08

- (1) Pursuant to Rule 416(a) under the Securities Act of 1933, as amended (the "Securities Act"), this registration statement shall also cover any additional shares of the Registrant's common stock, par value \$0.001 per share (the "Common Stock") that become issuable under the 2015 Equity Incentive Award Plan (the "2015 Plan") and the 2017 Stock Incentive Plan (the "2017 Plan") by reason of any stock dividend, stock split, recapitalization or similar transaction effected without the Registrant's receipt of consideration which would increase the number of outstanding shares of Common Stock.
- (2) Estimated solely for the purpose of calculating the amount of the registration fee pursuant to Rule 457(h) and Rule 457(c) promulgated under the Securities Act. The offering price per share and the aggregate offering price for shares reserved for future issuance under the 2015 Plan and 2017 Plan are based on the average of the high and the low price of Registrant's Common Stock as reported on The Nasdaq Capital Market on March 16, 2018. The chart below details the calculations of the registration fee:

Securities	Number of Shares	Offering Price Per Share	Aggregate Offering Price
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Shares reserved for future grant under the 2015 Plan	813,630	9.99(2)	\$ 8,128,163.70
Shares reserved for future grant under the 2017 Plan	300,000	9.99(2)	\$ 2,997,000.00
Proposed Maximum Aggregate Offering Price			\$11,125,163.70
Registration Fee			\$ 1,385.08

EXPLANATORY NOTE

This Registration Statement on Form S-8 is being filed for the purpose of registering an additional 1,113,630 shares of the Registrant's common stock issuable under the following employee benefit plans for which a Registration Statement of the Registrant on Form S-8 (File No. 333-220841) is effective: (i) the 2015 Equity Incentive Award Plan, as a result of the operation of an automatic annual increase provision therein, which added 813,630 shares of Common Stock, and (ii) the 2017 Stock Incentive Plan, as a result of forfeitures of unvested shares of restricted stock by former grantees which were previously not registered on a Form S-8, which added 300,000 shares of Common Stock.

INCORPORATION BY REFERENCE OF CONTENTS OF REGISTRATION STATEMENT ON FORM S-8

Pursuant to Instruction E of Form S-8, the contents of the Registration Statement on Form S-8 filed with the Securities and Exchange Commission on October 5, 2017 (File No. 333-220841) are incorporated by reference herein.

Exhibit Index

Exhibit Number	Exhibit Description	Incorporated by Reference			Filed Herewith
		Form	Date	Number	
4.1	Amended and Restated Certificate of Incorporation.	8-K	10/6/2015	3.1	
4.2	Certificate of Amendment to Amended and Restated Certificate of Incorporation.	8-K	8/28/2017	3.1	
4.3	Certificate of Amendment to Amended and Restated Certificate of Incorporation.	8-K	8/28/2017	3.2	
4.4	Amended and Restated Bylaws.	8-K	10/6/2015	3.2	
4.5	Form of Common Stock Certificate.	S-3	10/13/2017	4.5	
5.1	Opinion of Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C.				X
23.1	Consent of KPMG LLP, independent registered public accounting firm.				X
23.2	Consent of Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C. (included in Exhibit 5.1).				X
24.1	Power of Attorney. Reference is made to the signature page to the Registration Statement.				X
99.1(A)#	2015 Equity Incentive Award Plan.	10-K	3/20/2018	10.1	
99.1(B)#	Form of Stock Option Grant Notice and Stock Option Agreement under the 2015 Equity Incentive Award Plan.	S-1/A	9/11/2015	10.9(B)	
99.1(C)#	Form of Restricted Stock Award Grant Notice and Agreement and Form of Restricted Stock Unit Award Grant Notice and Agreement under the 2015 Equity Incentive Award Plan.	S-1/A	9/11/2015	10.9(C)	
99.2(A)#	2017 Stock Incentive Plan.	10-K	3/20/2018	10.4	
99.2(B)#	Form of Stock Option Grant Notice and Stock Option Agreement under 2017 Stock Incentive Plan.	10-Q	11/13/2017	10.17	

Indicates management contract or compensatory plan.

MINTZ LEVIN

One Financial Center
Boston, MA 02111
617-542-6000
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March 20, 2018

Synlogic, Inc.
301 Binney Street, Suite 402
Cambridge, MA 02142

Re: Registration Statement on Form S-8; 1,113,630 shares of Common Stock of Synlogic, Inc., par value \$0.001 per share

Ladies and Gentlemen:

We have acted as counsel to Synlogic, Inc., a Delaware corporation (the "Company"), in connection with the preparation and filing with the Securities and Exchange Commission (the "Commission") of a Registration Statement on Form S-8 (the "Registration Statement"), pursuant to which the company is registering the issuance under the Securities Act of 1933, as amended (the "Securities Act"), of an aggregate of 1,113,630 shares (the "Shares") of the Company's common stock, par value \$0.001 per share, that may be issued pursuant to the Company's 2015 Equity Incentive Award Plan (the "2015 Plan") and 2017 Stock Incentive Plan (the "2017 Plan" and together with the 2015 Plan, the "Plans"). This opinion is being rendered in connection with the filing of the Registration Statement with the Commission. All capitalized terms used herein and not otherwise defined shall have the respective meanings given to them in the Registration Statement.

As the counsel to the Company in connection with the Registration Statement, we have examined the actions taken by the Company in connection with the authorization of the issuance of the Shares, and such documents as we have deemed necessary to render this opinion. In our examination, we have assumed the genuineness of all signatures, the legal capacity of natural persons, the authenticity of all documents submitted to us as originals, the conformity to original documents of all documents submitted to us as certified or photostatic copies and the authenticity of the originals of such copies. As to questions of fact material to this opinion, we have relied upon certificates or comparable documents of public officials and of officers and representatives of the Company. In addition, we have assumed that the Company will receive any required consideration in accordance with the terms of the Plan.

Our opinion is limited to the General Corporation Law of the State of Delaware (the "DGCL"), and we express no opinion with respect to the laws of any other jurisdiction. No opinion is expressed herein with respect to the qualification of the Shares under the securities or blue sky laws of any state or of any foreign jurisdiction.

Based upon and subject to the foregoing, it is our opinion that the Shares, when issued and delivered in accordance with the terms of the Plan, will be validly issued, fully paid and non-assessable.

Please note that we are opining only as to the matters expressly set forth herein, and no opinion should be inferred as to any other matters. This opinion is based upon currently existing statutes, rules, regulations and judicial decisions, and we disclaim any obligation to advise you of any change in any of these sources of law or subsequent legal or factual developments which might affect any matters or opinions set forth herein.

Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C.

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March 20, 2018

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We understand that you wish to file this opinion with the Commission as an exhibit to the Registration Statement in accordance with the requirements of Item 601(b)(5) of Regulation S-K promulgated under the Securities Act, and we hereby consent thereto. In giving this consent, we do not admit that we are within the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations of the Commission promulgated thereunder.

Very truly yours,

/s/ Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C.

Consent of Independent Registered Public Accounting Firm

The Board of Directors
Synlogic, Inc.

We consent to the use of our report dated March 20, 2018, with respect to the consolidated balance sheets of Synlogic, Inc. as of December 31, 2017 and 2016, and the related consolidated statements of operations, comprehensive loss, contingently redeemable preferred equity and stockholders' equity, and cash flows for the years then ended, and the related notes (collectively, the consolidated financial statements), incorporated by reference herein.

/s/ KPMG LLP
Cambridge, Massachusetts

March 20, 2018