

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

**FORM S-1  
REGISTRATION STATEMENT**  
*UNDER  
THE SECURITIES ACT OF 1933*

**SYNOLOGIC, INC.**

(Exact name of registrant as specified in its charter)

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

**2834**  
(Primary Standard Industrial  
Classification Code Number)

**26-1824804**  
(I.R.S. Employer  
Identification No.)

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

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

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

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

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

*Copies of all communications, including communication sent to agent for service, should be sent to*

**Lewis J. Geffen, Esq.  
Daniel A. Bagliebter, Esq.  
Nishant M. Dharia, Esq.  
Mintz, Levin, Cohn,  
Ferris, Glovsky and Popeo, P.C.  
One Financial Center  
Boston, MA 02111  
(617) 542-6000**

**Steven M. Skolnick, Esq.  
Lowenstein Sandler LLP  
1251 Avenue of the Americas  
New York, NY 10020  
(212) 262-6700**

**Approximate date of commencement of proposed sale to the public:** As soon as practicable after the effective date of this Registration Statement.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, check the following box.

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.  Registration No. 333-274421

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

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

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

Large accelerated filer

Non-accelerated filer

Accelerated filer

Smaller reporting company

Emerging Growth Company

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

**This Registration Statement shall become effective upon filing with the Securities and Exchange Commission in accordance with Rule 462(b) under the Securities Act of 1933, as amended.**

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## EXPLANATORY NOTE AND INCORPORATION BY REFERENCE

This Registration Statement is being filed pursuant to Rule 462(b) under the Securities Act of 1933, as amended, or the Securities Act, for the sole purpose of increasing the aggregate offering price of shares of common stock, pre-funded warrants, common warrants and shares of common stock issuable upon exercise of the pre-funded warrants and common warrants to be offered by Synlogic, Inc., or the Registrant, by \$6,200,000. The contents of the Registration Statement on Form S-1 (File No. 333-274421) filed by the Registrant with the Securities and Exchange Commission, or the Commission, pursuant to the Securities Act, or the Prior Registration Statement, which was declared effective by the Commission on September 28, 2023, including all exhibits to the Prior Registration Statement, are incorporated by reference into this Registration Statement. The additional securities that are being registered for issuance and sale are in an amount and at a price that together represent no more than 20% of the maximum aggregate offering price set forth in the Calculation of Filing Fees table contained in the Prior Registration Statement.

The required opinion and consents are listed on an Exhibit Index attached hereto and filed herewith.

## Item 16. Exhibits and Financial Statement Schedules

### (a) Exhibits.

The exhibits listed below are filed as part of this registration statement.

<u>Exhibit No.</u>	<u>Description of Exhibit</u>
5.1**	<a href="#">Opinion of Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C.</a>
23.1**	<a href="#">Consent of Independent Registered Public Accounting Firm</a>
23.2**	<a href="#">Consent of Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C. (included in Exhibit 5.1)</a>
24.1*	<a href="#">Power of Attorney (included on the signature page to Amendment No. 1 to the Registration Statement on Form S-1 of the Registrant (File No. 333-274421) and incorporated herein by reference)</a>
107**	<a href="#">Filing Fee Table</a>

\* Previously filed

\*\* Filed herewith

## SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized in the City of Cambridge, Commonwealth of Massachusetts, on September 28, 2023.

SYNLOGIC, INC.

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

Name: Aoife Brennan MB, BCh, BAO, MMSc

Title: *President and Chief Executive Officer*

Pursuant to the requirements of the Securities Act of 1933, this Registration Statement on Form S-1 has been signed below by the following persons in the capacities and on the dates indicated.

Name	Title	Date
<u>/s/ Aoife Brennan MB, BCh, BAO, MMSc</u> Aoife Brennan MB, BCh, BAO, MMSc	President, Chief Executive Officer and Director <i>(Principal Executive Officer)</i>	September 28, 2023
<u>/s/ Michael Jensen</u> Michael Jensen	Chief Financial Officer <i>(Principal Financial Officer and Principal Accounting Officer)</i>	September 28, 2023
<u>*</u> Peter Barrett	Chairman of the Board	September 28, 2023
<u>*</u> Michael Burgess	Director	September 28, 2023

<u>*</u> Michael Heffernan	Director	September 28, 2023
<u>*</u> Patricia Hurter	Director	September 28, 2023
<u>*</u> Lisa Kelly-Croswell	Director	September 28, 2023
<u>*</u> Nick Leschly	Director	September 28, 2023
<u>*</u> Edward Mathers	Director	September 28, 2023
<u>*</u> Richard P. Shea	Director	September 28, 2023

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

Aoife Brennan MB, BCh, BAO, MMSc

Attorney-in-fact



September 28, 2023

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

Ladies and Gentlemen:

We have acted as legal counsel to Synlogic, Inc., a Delaware corporation (the “**Company**”), in connection with the preparation and filing with the Securities and Exchange Commission (the “**SEC**”) of (i) a Registration Statement (File No. 333-274421) on Form S-1, as amended (the “**Registration Statement**”), filed by the Company with the SEC under the Securities Act of 1933, as amended (the “**Securities Act**”) and (ii) a second Registration Statement on Form S-1 filed pursuant to Rule 462(b) under the Securities Act (the “**462(b) Registration Statement**”). The Registration Statement and 462(b) Registration Statement together relate to a public offering of an aggregate of (i) up to 7,394,366 shares of the Company’s common stock, par value \$0.001 per share (the “**Common Stock**”), and in lieu of Common Stock to certain investors that so choose, pre-funded warrants (the “**Pre-Funded Warrants**”) to purchase up to 7,394,366 shares of Common Stock, and (ii) accompanying warrants (the “**Common Warrants**”) to purchase up to 7,394,366 shares of Common Stock (the “**Common Warrants**”, collectively with the **Pre-Funded Warrants**, the “**Warrants**”, and collectively with the shares of Common Stock to be sold in the public offering, the “**Securities**”).

The Securities are to be sold pursuant to an Underwriting Agreement (the “**Underwriting Agreement**”) to be entered into by and between the Company and Chardan Capital Markets, LLC, as representative of the several underwriters named therein (the “**Underwriters**”), which is filed as an exhibit to the Registration Statement.

This opinion is being rendered in connection with the filing of the 462(b) Registration Statement with the SEC. All capitalized terms used herein and not otherwise defined shall have the respective meanings given to them in the 462(b) Registration Statement.

In connection with this opinion, we have examined the: (i) Company’s Amended and Restated Certificate of Incorporation, as amended to date (the “**Certificate of Incorporation**”); (ii) Company’s Amended and Restated Bylaws, as amended to date (the “**Bylaws**”); (iii) Company’s records of the meetings of the Board of Directors (including committees thereof) as we have deemed material; (iv) Registration Statement, together with the exhibits thereto filed with the SEC; (v) 462(b) Registration Statement, together with the exhibits thereto filed with the SEC; and (vi) Underwriting Agreement and such other records of the corporate proceedings of the Company and certificates of the Company’s officers as we have deemed relevant.

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.

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BOSTON      LOS ANGELES      NEW YORK      SAN DIEGO      SAN FRANCISCO      TORONTO      WASHINGTON  
MINTZ, LEVIN, COHN, FERRIS, GLOVSKY AND POPEO, P.C.

With respect to our opinion as to the shares of Common Stock issuable upon exercise of any Warrant, we have assumed that, at the time of issuance, a sufficient number of shares of Common Stock are authorized and available for issuance under the Certificate of Incorporation as then in effect and that the exercise price per share of the Warrants is an amount that is not less than the par value of the Common Stock. We have relied, without independent verification, on certificates of public officials and, as to matters of fact material to the opinions set forth below, on certificates of officers of the Company.

Our opinion is limited to the General Corporation Law of the State of Delaware, 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 Securities under the securities or blue sky laws of any state or any foreign jurisdiction.

Based upon the foregoing, we are of the opinion that (i) the Common Stock, when issued and delivered in accordance with the terms of the Underwriting Agreement, will be validly issued, fully paid and non-assessable, (ii) the Warrants, if and when paid for in accordance with the terms of the 462(b) Registration Statement, the Registration Statement and the Underwriting Agreement, will constitute valid and legally binding obligations of the Company, except as may be limited by bankruptcy, insolvency or other similar laws affecting the rights and remedies of creditors in general and the general principles of equity and (iii) with respect to shares of Common Stock issuable upon exercise of the Warrants when the exercise price is paid in full and the shares are issued in accordance with the terms and conditions of the Warrants, 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.

We understand that you wish to file this opinion with the SEC as an exhibit to the 462(b) Registration Statement in accordance with the requirements of Item 601(b)(5) of Regulation S-K promulgated under the Securities Act and to reference the firm's name under the caption "Legal Matters" in the prospectus, which forms part of the 462(b) Registration Statement, 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 SEC promulgated thereunder.

Very truly yours,

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

MINTZ, LEVIN, COHN, FERRIS,  
GLOVSKY AND POPEO, P.C.

**Consent of Independent Registered Public Accounting Firm**

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

/s/ KPMG LLP

Boston, Massachusetts  
September 28, 2023

**Calculation of Filing Fee Tables**

**Form S-1**  
(Form Type)

**Synlogic, Inc.**  
(Exact Name of Registrant as Specified in its Charter)

Table 1: Newly Registered Securities

Security Type	Security Class Title	Fee Calculation Rule	Amount Registered	Proposed Maximum Offering Price Per Unit	Maximum Aggregate Offering Price(1)(2)	Fee Rate	Amount of Registration Fee
Equity	Common Stock, par value \$0.001 per share	Rule 457(o)			\$21,000,000	\$110.20 per \$1,000,000	\$2,314.20
Equity	Warrants to purchase Common Stock	Other				\$110.20 per \$1,000,000	
Equity	Pre-funded warrants to purchase Common Stock <sup>(3)</sup> (4)	Other				\$110.20 per \$1,000,000	
Equity	Common Stock, par value \$0.001 per share, underlying warrants <sup>(5)</sup>	Other			\$25,200,000	\$110.20 per \$1,000,000	\$2,777.04
Equity	Common Stock, par value \$0.001 per share, underlying pre-funded warrants	Other				\$110.20 per \$1,000,000	
<b>Total Offering Amounts</b>					\$46,200,000		\$5,091.24
<b>Total Fees Previously Paid</b>							\$4,408.00
<b>Total Fee Offsets</b>							—
<b>Net Fee Due</b>							\$683.24

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

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

(3) The proposed maximum aggregate offering price of the Common Stock proposed to be sold in the offering will be reduced on a dollar-for-dollar basis based on the offering price of any pre-funded warrants offered and sold in the offering, and as such the proposed maximum offering price of the common stock and pre-funded warrants (including the common stock issuable upon exercise of the pre-funded warrants) if any, is \$21,000,000.

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

(5) Based on an assumed per share exercise price for the warrants to purchase Common Stock of 120% of the public offering price per unit in this offering.