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

FORM 8-K

CURRENT REPORT
Pursuant to Section 13 or 15(d)
of the Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): May 31, 2023

SYNLOGIC, INC.
(Exact name of Registrant as Specified in Its Charter)

Delaware	**001-37566**	**26-1824804**
(State or Other Jurisdiction of Incorporation)	**(Commission File Number)**	**(IRS Employer Identification No.)**

301 Binney St.
Suite 402
Cambridge, Massachusetts **02142**
(Address of Principal Executive Offices) **(Zip Code)**

Registrant's Telephone Number, Including Area Code: (617) 401-9975

Not applicable
(Former Name or Former Address, if Changed Since Last Report)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions (see General Instruction A.2. below):

☐ Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)

☐ Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)

☐ Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))

☐ Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	**Trading Symbol(s)**	**Name of each exchange on which registered**
Common Stock, par value $0.001 per share	SYBX	The NASDAQ Capital Market

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (17 CFR § 230.405) or Rule 12b-2 of the Securities Exchange Act of 1934 (17 CFR § 240.12b-2).

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. ☐

Item 2.05 Costs Associated with Exit or Disposal Activities

On June 5, 2023, Synlogic, Inc. (the "Company") announced that it is implementing a reduction in workforce designed to focus resources on advancing the Company's clinical stage programs and research activities that support the current clinical pipeline and its ongoing collaboration with Roche. The realignment is estimated to reduce the Company's workforce by approximately 21%. The Company expects to complete substantially all of the reduction in workforce by the end of the fiscal quarter ending June 30, 2023. The Company estimates that it will incur approximately $0.9 million of costs in connection with the reduction in workforce related to severance pay and other related termination benefits. The Company communicated the workforce reduction on May 31, 2023 and expects the majority of the costs associated with the strategic realignment to be incurred during the second quarter ending June 30, 2023 and the third quarter ending September 30, 2023. The charges the Company expects to incur in connection with this reduction in workforce are subject to a number of assumptions, risks and uncertainties, and actual results may materially differ. The Company may also incur other material charges not currently contemplated due to events that may occur as a result of, or associated with, these actions.

Item 8.01. Other Events.

On June 5, 2023, the Company issued a press release announcing the initiation of Synpheny-3 global, pivotal Phase 3 study evaluating SYNB1934 for the treatment of phenylketonuria. A copy of the press release is attached as Exhibit 99.1 to this Current Report on Form 8-K and incorporated by reference herein.

Item 9.01 Financial Statements and Exhibits.

(d) Exhibits

Exhibit No.	Description
99.1	Press Release dated June 5, 2023.
104	Cover Page Interactive Data File (embedded within the Inline XBRL document)

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: June 5, 2023

Synlogic, Inc.

By: /s/ Michael Jensen
Name: Michael Jensen
Title: Chief Financial Officer

Synlogic Announces Initiation of Synpheny-3 Global, Pivotal Phase 3 Study Evaluating SYNB1934 for Treatment of Phenylketonuria

Registrational study designed to support BLA submission of first-in-class biotherapeutic

Company further streamlining organization to focus resources on execution of late clinical-stage programs in rare metabolic diseases

Cambridge, Mass. June 5, 2023 – Synlogic, Inc. (Nasdaq: SYBX), a clinical-stage biotechnology company advancing novel, oral, non-systemically absorbed biotherapeutics to transform the care of serious diseases, today announced the initiation of Synpheny-3, a global, pivotal Phase 3 study evaluating the efficacy and safety of SYNB1934 as a potential treatment for phenylketonuria (PKU).

“We have worked tirelessly to advance this program and today is an important milestone for Synlogic and for the patient community living with the extreme burden of PKU,” said Aoife Brennan, M.B. Ch.B., Synlogic President and Chief Executive Officer. “We have partnered on this pivotal trial design with key stakeholders including clinician experts, global regulatory agencies and people living with PKU and are very grateful for their many insights. In particular, feedback from patients has heightened our sense of urgency to bring forward a new oral therapeutic that can be used either a monotherapy or adjunctive medical treatment.”

“This is exciting news. The PKU community is grateful to Synlogic for their commitment to bringing a new treatment option forward for individuals with PKU, and for seeking the input and partnership of our community in this process,” said Lisa Milberg, Executive Director, National PKU Alliance.

The Synpheny-3 Trial

Synpheny-3 is a randomized, placebo-controlled, global, multi-center, pivotal Phase 3 clinical trial designed to evaluate the efficacy and safety of SYNB1934 as a treatment for PKU. The final trial design incorporates feedback from global regulatory agencies including the U.S. Food and Drug Administration (FDA). The global study will enroll approximately 150 patients with plasma phenylalanine (Phe) levels at baseline of >360 µM. Synpheny-3 will include patients ages 18 years and older; an initial subset of data from patients in Part 1 will be used to assess the opportunity to lower the age of enrollment to 12 years of age. Study participants may follow their usual diet while participating in the trial.

Synpheny-3 is expected to be conducted at approximately 30 clinical sites across the United States, Canada, Germany, Denmark, Israel, Turkey and Georgia. The study has been designed for patient convenience, and offers opportunities to participate in person, or in a virtual or hybrid format.

The study consists of three parts: Part 1 is a run-in period, enabling individualized titration across three potential dose levels ($3x10^{11}$, $6x10^{11}$ and $1x10^{12}$), with patients spending a minimum of three weeks at each dose. Part 2 of the trial is a four-week, placebo-controlled, randomized withdrawal that will be used to assess the primary endpoint: change in levels of plasma Phe, with a primary analysis conducted among responders from Part 1. The definition for responders is a reduction in plasma Phe from baseline of ≥20%. Part 3 is an open-label extension that may extend for up to three years.

More information on the Synpheny-3 study is available at www.clinicaltrials.gov, identifier NCT05764239 and also by visiting pkuresearchstudy.com.

Business Update

In recognition of the important milestone of Synpheny-3 initiation and the progress of Synlogic's clinical-stage programs, the Company also announced efforts to direct resources towards its late-stage portfolio of product candidates for rare metabolic diseases. Changes include prioritizing activities including the pivotal and pediatric studies of SYNB1934 for PKU, and advancing to Phase 2 for SYNB1353 for HCU, as well as research activities that support the current clinical pipeline and the ongoing collaboration with Roche.

With that prioritization, the Company has reduced its workforce by approximately 21%, which is expected to extend its cash runway further into the second half of 2024. The Company estimates that it will incur approximately $0.9 million of costs in connection with the reduction in workforce related to severance pay and other related termination benefits. The Company communicated the workforce reduction on May 31, 2023 and expects the majority of the costs associated with the reduction in force plan to be incurred during the second quarter ending June 30, 2023 and the third quarter ending September 30, 2023. The Company may also incur other material charges not currently contemplated due to events that may occur because of, or associated with, these actions.

About SYNB1934

SYNB1934 is an orally administered, non-systemically absorbed, potential treatment for phenylketonuria (PKU), a rare metabolic disease caused by inherited mutations that impair the breakdown of phenylalanine (Phe), an amino acid found in all protein-containing foods. The goal of PKU management is to reduce plasma Phe below neurotoxic levels, reducing risk of neurocognitive complications.

Current treatment options for PKU are limited due to safety and efficacy, leaving the majority of people living with PKU without medical management and with uncontrolled Phe. Synlogic designed SYNB1934 to target and consume Phe in the GI tract, by applying precision genetic engineering to a well-characterized probiotic. Results to date indicate the potential for SYNB1934 to be the first therapeutic for PKU approved as both a monotherapy and adjunctive medical treatment, and following successful Phase 2 results, it has advanced to Synpheny-3, a global, pivotal Phase 3 study. SYNB1934 has received Orphan Drug Designation (ODD) and Rare Pediatric Disease Designation (RPDD) from the FDA in addition to orphan designation from the European Medicines Agency (EMA).

About Synlogic

Synlogic is a clinical-stage biotechnology company advancing novel, oral, non-systemically absorbed biotherapeutics to transform the care of serious diseases in need of new treatment options. The Company's late-stage pipeline is focused on rare metabolic diseases, led by SYNB1934, currently being studied as a potential treatment for phenylketonuria (PKU) in Synpheny-3, a global, pivotal Phase 3 study. Additional product candidates address diseases including homocystinuria (HCU), enteric hyperoxaluria, gout, and cystinuria. This pipeline is fueled by the Synthetic Biotic platform, which applies precision genetic engineering to well-characterized probiotics. This enables Synlogic to create GI-restricted, oral medicines designed to consume or modify disease-specific metabolites – an approach well suited for PKU and HCU, both inborn errors of metabolism, as well as other disorders in which the disease–specific metabolites transit through the GI tract, providing validated targets for these Synthetic Biotics. Research activities include a partnership with Roche focused on inflammatory bowel disease (IBD), and a collaboration with Ginkgo Bioworks in synthetic biology, which has contributed to two pipeline programs to date. For more information, please visit www.synlogictx.com or follow us on Twitter or LinkedIn.

Forward-Looking Statements

This press release contains "forward-looking statements" that involve substantial risks and uncertainties for purposes of the safe harbor provided by the Private Securities Litigation Reform Act of 1995. All statements, other than statements of historical facts, included in this press release regarding strategy, future operations, clinical development plans, future financial position, future revenue, projected expenses, prospects, plans and objectives of management are forward-looking statements. In addition, when or if used in this press release, the words "may," "could," "should," "anticipate," "believe," "look forward," "estimate," "expect," "intend," "on track," "plan," "predict," "prepare" and similar expressions and their variants, as they relate to Synlogic, may identify forward-looking statements. Examples of forward-looking statements include, but are not limited to, statements regarding the potential of Synlogic's approach to Synthetic Biotics to develop

therapeutics to address a wide range of diseases including: inborn errors of metabolism and inflammatory and immune disorders; our expectations about sufficiency of our existing cash balance; the future clinical development of Synthetic Biotics; the approach Synlogic is taking to discover and develop novel therapeutics using synthetic biology; and the expected timing of Synlogic's clinical trials of SYNB1934, SYNB1353, SYNB8802 and SYNB2081 and availability of clinical trial data. Actual results could differ materially from those contained in any forward-looking statements as a result of various factors, including: the uncertainties inherent in the clinical and preclinical development process; the ability of Synlogic to protect its intellectual property rights; and legislative, regulatory, political and economic developments, as well as those risks identified under the heading "Risk Factors" in Synlogic's filings with the U.S. Securities and Exchange Commission. The forward-looking statements contained in this press release reflect Synlogic's current views with respect to future events. Synlogic anticipates that subsequent events and developments will cause its views to change. However, while Synlogic may elect to update these forward-looking statements in the future, Synlogic specifically disclaims any obligation to do so. These forward-looking statements should not be relied upon as representing Synlogic's view as of any date subsequent to the date hereof.

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