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): December 22, 2021

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

Delaware	**001-38473**	**46-5594527**
(State or other jurisdiction of incorporation or organization)	**(Commission File Number)**	**(I.R.S. Employer Identification No.)**

620 Memorial Drive
Cambridge, Massachusetts 02139
(Address of principal executive offices) (Zip Code)

(617) 577-0300
(Registrant's telephone number, including area code)

N/A
(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:

☐ 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, $0.001 par value per share	EVLO	Nasdaq Global Select Market

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

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 8.01. Other Events.

Evelo Biosciences, Inc. (the "Company") recently updated its business information as follows:

Phase 2 Clinical Trial of EDP1815 in Atopic Dermatitis

On December 22, 2021, the Company announced planned updates to the study protocol for its Phase 2 clinical trial of EDP1815 in atopic dermatitis. Based on previously reported results from a Phase 2 clinical trial of EDP1815 in mild and moderate psoriasis and the results from a cohort of participants with moderate atopic dermatitis in the Company's on-going Phase 1b clinical trial of EDP1815 in mild and moderate psoriasis and mild and moderate atopic dermatitis, the Company has decided to increase the number of participants to 300, extend the dosing period to 16 weeks, reduce the lowest dose to be investigated, and evaluate EDP1815 drug substance produced using two different manufacturing processes in the Phase 2 atopic dermatitis trial.

The primary objective of the multicenter, double-blind, placebo-controlled Phase 2 trial is to show superiority of EDP1815, dosed for 16 weeks, over placebo. The primary endpoint will be the percent of participants who achieve a 50% reduction in the Eczema Area and Severity Index (EASI) score (EASI-50) at week 16. Secondary endpoints will include several physician-reported outcomes, such as Investigator Global Assessment (IGA) and Body Surface Area (BSA), along with patient-reported outcomes such as the Dermatology Life Quality Index, itch using the daily Peak Pruritus Numerical Rating Scale, and Patient Oriented Eczema Measure (POEM).

Participants will be randomized into one of three cohorts. Each cohort will include approximately 100 participants randomized in a 3:1 ratio (75 to EDP1815 and 25 to placebo) for a total of 300 participants. Cohort 1 will explore a daily dose of 1.6×10^{11} total cells of EDP1815 or matching placebo administered as two capsules once daily. Cohorts 2 and 3 will explore a daily dose of 6.4×10^{11} total cells of EDP1815 or matching placebo administered as two capsules once daily or one capsule twice daily, respectively. The different concentrations of drug (1.6×10^{11} total cells and 6.4×10^{11} total cells) are prepared from two different manufacturing processes.

All participants will have the opportunity to join an open label extension trial once they complete 16 weeks of dosing. Participants in the open label extension trial will receive EDP1815 for up to 52 weeks.
Based on these planned changes to the study protocol, it is anticipated that dosing for the Phase 2 atopic dermatitis trial will begin in the first quarter of 2022, with results anticipated in the first half of 2023.

Phase 1b Clinical Data with EDP1815 in Atopic Dermatitis

On December 22, 2021, the Company announced data from a cohort of 24 participants with moderate atopic dermatitis in its on-going Phase 1b clinical trial of EDP1815 in mild and moderate psoriasis and mild and moderate atopic dermatitis. The participants were randomized in a 2:1 ratio, with 16 receiving EDP1815 (6.4×10^{11} total cells) and 8 receiving a matching placebo once daily for eight weeks. The primary objective was to assess the safety and tolerability of the higher concentration EDP1815 after eight weeks of dosing. The secondary objective was to assess the clinical improvement in participants with moderate atopic dermatitis. All the participants used an emollient twice daily for at least seven consecutive days immediately prior to day 1 and continued to use the background emollient treatment twice daily throughout the trial.

In this cohort, EDP1815 was shown to be well-tolerated with no treatment-related adverse events of moderate or severe intensity and no serious adverse events through eight weeks of dosing. The safety data were consistent with what previously was seen in another Phase 1b cohort of participants with mild and moderate atopic dermatitis, as well as in a Phase 2 clinical trial of EDP1815 in mild and moderate psoriasis.

In this cohort, the mean percent change and proportion of responders were evaluated after 8 weeks of dosing. An initial improvement in mean percent change in EASI was observed at day 15 compared to placebo; however, the population mean change decreased over the remainder of the dosing period, and there was no overall difference from placebo at the end of the dosing period.

These results differ from previously reported results from another cohort of 24 participants with mild and moderate atopic dermatitis in the Phase 1b clinical trial of EDP1815 (1.6×10^{11} total cells). In the earlier cohort, the data showed consistent improvements in percentage change from baseline compared to placebo across three clinical scores: EASI, IGA*BSA, and SCORing Atopic Dermatitis. In addition, 7 out of 16 (44%) participants dosed with EDP1815 for 8 weeks achieved an EASI-50 by day 70, compared with 0% in the placebo group. Given the difference in clinical effects seen between the two cohorts, which were dosed with EDP1815 produced using different manufacturing processes, the Company is evaluating drug substance produced using both manufacturing processes in the Phase 2 atopic dermatitis trial.

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 hereunto duly authorized.

EVELO BIOSCIENCES, INC.

Date: December 22, 2021

By: /s/ Daniel S. Char
Daniel S. Char
General Counsel & Secretary