



DIVISION OF  
CORPORATION FINANCE

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

April 3, 2018

Balkrishan (Simba) Gill, Ph.D.  
President and Chief Executive Officer  
Evelo Biosciences, Inc.  
620 Memorial Drive, Suite 200  
Cambridge, Massachusetts 02139

**Re: Evelo Biosciences, Inc.**  
**Draft Registration Statement on Form S-1**  
**Submitted March 5, 2018**  
**CIK No. 0001694665**

Dear Dr. Gill:

We have reviewed your draft registration statement and have the following comments. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter by providing the requested information and either submitting an amended draft registration statement or publicly filing your registration statement on EDGAR. If you do not believe our comments apply to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing the information you provide in response to these comments and your amended draft registration statement or filed registration statement, we may have additional comments.

Draft Registration Statement on Form S-1

Overview, page 1

1. Please balance the statement that you are pioneering the development of therapies designed to act on the gut-body network with the fact that you have not initiated clinical trials for any product candidate.
2. Given that you have not yet begun the clinical testing that would serve to establish safety and efficacy for purposes of regulatory approval, it is premature to suggest that a preclinical candidate is safe or effective. Please revise the third paragraph, and elsewhere as appropriate, accordingly.

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3. Please revise the table of clinical product candidates to indicate the three phases of clinical development that must occur prior to regulatory approval and commercialization, and that EDP1066, EDP1815 and EDP1503 have not commenced Phase 1 clinical trials.
4. Please revise the table on pages 3, 86 and 93 to remove the programs relating to Rheumatoid Arthritis, Ulcerative Colitis/Crohn's Disease, Colorectal Cancer and Renal Cell Carcinoma. Because you have not identified a product candidate for these programs, it is premature to include them in a table of clinical product candidates. Please also remove the line items for Therapeutic Areas with Preclinical Data and Additional Therapeutics Areas, which appear to be in the discovery phase.
5. Please revise the product candidate table to disclose that you expect to conduct the trials for EDP1066 and EDP1815 in the United Kingdom and whether you expect there to be any limitations to using the trial results for approval by the FDA since the trials are being conducted outside of the United States.

Risk Factors, page 4

6. Please revise the third bullet point to clarify that you are in the pre-clinical stages of drug development and that you have not initiated clinical studies for any of your products.

Implications of Being an Emerging Growth Company, page 5

7. Please supplementally provide us with copies of all written communications, as defined in Rule 405 under the Securities Act, that you, or anyone authorized to do so on your behalf, present to potential investors in reliance on Section 5(d) of the Securities Act, whether or not they retain copies of the communications.

Risk Factors

Risks Related to Our Common Stock and this Offering

Provisions in our related certificate of incorporation..., page 52

8. We note your reference on page 53 to the provision in your certificate of incorporation that establishes an exclusive forum for legal actions brought by your shareholders. Please expand your disclosure as to the risks associated with this provision and highlight in a separate caption.

Use of Proceeds, page 57

9. Please amend your disclosure to indicate how far the allocations set forth in this section will advance EDP1066 and EDP1815 in the inflammatory disease program and EDP1503 in the oncology program. To the extent that the proceeds from the offering will not be sufficient to fund the proof of concept trials specified in this section to completion, please revise the disclosure to make this clear.

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Manufacturing, page 110

10. Please expand your disclosure to describe in greater detail the aspects of your manufacturing process that "potentially provide a distinct competitive advantage." Clarify the significance of Figure 20 on page 111 and explain what you mean by "increas[ing] yield by four logs." Explain how your fermentation system "enables rapid process optimization" compared to the standard process and briefly describe how you optimized this process "across several parameters."

Intellectual Property

Patent Portfolio, page 112

11. Please expand your disclosure of your patents to discuss the type of patent protection you have (e.g., composition of matter, use or process).

License Agreements, page 114

12. Please describe the material terms of the license agreement with the Mayo Clinic entered in June 2016 that is discussed in Note 8 on page F-17 of the consolidated financial statements or provide the basis for why such disclosure is not required. If the June 2016 agreement was not replaced by the August 2017 agreement, please also file the 2016 agreement as an exhibit or tell us why it is not required to be filed.

University of Chicago License Agreement, page 114

13. Please revise your description to disclose the specific number of years from first commercial sale you will be required to make royalty payments under the agreement.

General

14. Please provide us proofs of all graphics, visual, or photographic information you will provide in the printed prospectus prior to its use, for example in a preliminary prospectus. Please note that we may have comments regarding this material.
15. We note that you have requested confidential treatment for agreements that are filed as exhibits to the registration statement. We will send any comments on your application for confidential treatment under separate cover.

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You may contact Lisa Vanjoske at 202-551-3614 or Mark Brunhofer at 202-551-3638 if you have questions regarding comments on the financial statements and related matters. Please contact Chris Edwards at 202-551-6761 or Mary Beth Breslin at 202-551-3625 with any other questions.

Division of Corporation Finance  
Office of Healthcare & Insurance

cc: Pete Handrinos