

May 17, 2022

R. Nolan Townsend
Chief Executive Officer
Lexeo Therapeutics, Inc.
430 East 29th Street, Floor 14
New York, NY 10016

Inc.

Statement on Form S-1

2022

Re: Lexeo Therapeutics,

Amendment No. 1 to
Draft Registration

Submitted May 5,

CIK No. 0001907108

Dear Mr. Townsend:

We have reviewed your amended 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.

Amendment No. 1 to Draft Registration Statement on Form S-1 submitted May 5, 2022

Overview, page 1

1. We note your disclosure here and throughout your draft registration statement that you are utilizing [y]our modular approach that integrates clinically validated technology. Please revise to clarify what you mean by "clinically validated technology" and provide the basis for that claim.

High Transduction Efficiency and Biodistribution, page 4

2. We note your response to prior comments 6 and 7 and your revised disclosure on page 4 and 129 and reissue in part. Please revise your disclosure to clearly discuss the specific

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"preclinical studies and clinical trials" you relied upon as your basis for your belief that AAVrh10 is an "optimal vector for delivery and expression of transgenes for the treatment of the cardiovascular and CNS diseases." Clarify whether you or your collaboration partners conducted these studies/trials or whether unrelated third-parties conducted them.

In addition, if your basis is based on preclinical studies on non-human cells, please make that clear or otherwise advise.

Capitalization, page 98

3. Please revise to remove cash from total capitalization.
Management's Discussion and Analysis of Financial Condition and Results of
Operations
Results of operations
Comparison of the years ended December 31, 2021 and 2020, page 112

4. Please revise to include a discussion of grant revenue for each period
in your results
of operations.
Equity incentive plans
2022 equity incentive plan, page 191

5. We note your response to prior comment 21 and revised disclosure on page
192 and
reissue in part. Your disclosure states that only the approval of the
holders of a majority of
the Company's shares is required in "certain circumstances." Please
clarify the "certain
circumstances" that would require stockholder approval. If certain
repricing actions
would not require stockholder approval, please include appropriate risk
factor disclosure,
including whether proxy advisory firms could find such repricing without
stockholder
approval contrary to a performance-based pay philosophy or otherwise
advise.
You may contact Eric Atallah at 202-551-3663 or Lynn Dicker at
202-551-3616 if you
have questions regarding comments on the financial statements and related
matters. Please
contact Jason Drory at 202-551-8342 or Tim Buchmiller at 202-551-3635 with any
other
questions.

FirstName LastNameR. Nolan Townsend
Corporation Finance
Comapany NameLexeo Therapeutics, Inc.
Sciences
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cc: Dayne Brown, Esq.
FirstName LastName

Sincerely,
Division of
Office of Life