

October 1, 2021

+1 617 526 6000 (t)
+1 617 526 5000 (f)
wilmerhale.com

By Electronic Submission

Securities and Exchange Commission
Division of Corporation Finance
100 F Street, N.E.
Washington, DC 20549
Attention: Ada Sarmento

Re: Xilio Therapeutics, Inc.
Draft Registration Statement on Form S-1
Submitted September 14, 2021
CIK No. 0001840233

Ladies and Gentlemen:

On behalf of Xilio Therapeutics, Inc. (the “Company”), we are responding to the comments contained in a letter, dated September 23, 2021 (the “Letter”) from the Staff (the “Staff”) of the Office of Life Sciences of the Division of Corporation Finance of the Securities and Exchange Commission (the “Commission”) to René Russo, Pharm.D., the Company’s President and Chief Executive Officer, relating to the above referenced Draft Registration Statement on Form S-1.

The Company also is filing a Registration Statement on Form S-1 (the “Registration Statement”), relating to the registration under the Securities Act of 1933, as amended (the “Securities Act”), of common stock of the Company.

Set forth below are the Company’s responses to the Staff’s comments. The responses are based upon information provided to Wilmer Cutler Pickering Hale and Dorr LLP by the Company. The responses are keyed to the numbering of the comments and the headings used in the Letter. Where appropriate, the Company has responded to the Staff’s comment by making changes to the disclosure in the Registration Statement. Page numbers referred to in the responses reference the applicable page numbers in the Registration Statement.

Wilmer Cutler Pickering Hale and Dorr LLP, 60 State Street, Boston, Massachusetts 02109

Beijing Berlin Boston Brussels Denver Frankfurt London Los Angeles New York Palo Alto San Francisco Washington

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Amendment No. 1 to Draft Registration Statement on Form S-1

Prospectus Summary

Our Pipeline, page 4

1. Please revise your pipeline table to remove your targeted cytokine program. Given the early stage of development of this program, it does not appear to be sufficiently material to your business to warrant inclusion in your pipeline table.

Response: In response to the Staff's comment, the Company has revised the disclosure on pages 5 and 118 of the Registration Statement.

Our History and Team, page 8

2. We note your response to prior comment 4. The identification of past life science investors appears to suggest that potential investors may consider investments made by these investors as a factor in making their investment decisions without knowing the amount of their investment in total or on a per share basis, their investment strategies or whether these investors continue to hold their shares. Additionally, as these shareholders are not subject to the reporting requirements of Section 16, investors will not know when they decide to sell their shares. Therefore, we continue to believe the disclosure is inappropriate for the registration statement and ask that it be removed.

Response: In response to the Staff's comment, the Company has revised the disclosure on pages 8 and 112 of the Registration Statement.

Our Strategy, page 8

3. We note your disclosure that your strategy is to enable a rapid transition to randomized registration-enabling trials in a range of solid tumor indications for XTX101. Please revise this statement and any similar disclosure to remove any implication that you will be successful in advancing your product candidates in a rapid or accelerated manner as such statements are speculative.

Response: In response to the Staff's comment, the Company has revised the disclosure on pages 9 and 112 of the Registration Statement.

If you have any further questions or comments, or if you require any additional information, please contact the undersigned by telephone at (617) 526-6393 or e-mail at cynthia.mazareas@wilmerhale.com. Thank you for your assistance.

Very truly yours,

/s/ Cynthia T. Mazareas

Cynthia T. Mazareas

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cc: René Russo, Pharm.D., *Xilio Therapeutics, Inc.*
Salvatore Giovine, *Xilio Therapeutics, Inc.*
Chris Frankenfield, *Xilio Therapeutics, Inc.*
Molly W. Fox, *Wilmer Cutler Pickering Hale and Dorr LLP*
Divakar Gupta, *Cooley LLP*
Richard C. Segal, *Cooley LLP*
