

August 23, 2024

**VIA EDGAR AND FEDERAL EXPRESS**

United States Securities and Exchange Commission  
Division of Corporation Finance  
Office of Life Sciences  
100 F. Street, N.E.  
Washington, D.C. 20549  
Attention: Christine Torney, Angela Connell, Jimmy McNamara, Alan Campbell

**Re: MBX Biosciences, Inc.  
Amendment No. 2 to Draft Registration Statement on Form S-1  
Submitted July 11, 2024  
CIK 0001776111**

Dear Ladies and Gentlemen:

This letter is submitted on behalf of MBX Biosciences, Inc. (the “**Company**”), in response to the comments of the staff of the Division of Corporation Finance (the “**Staff**”) of the U.S. Securities and Exchange Commission (the “**Commission**”) with respect to the Company’s Draft Registration Statement on Form S-1, originally confidentially submitted on March 22, 2024 (the “**Draft Registration Statement**”), and resubmitted on April 26, 2024 (“**Amendment No. 1 to the Draft Registration Statement**”) and July 11, 2024 (“**Amendment No. 2 to the Draft Registration Statement**”), as set forth in the Staff’s letter, dated July 22, 2024, addressed to P. Kent Hawryluk (the “**Comment Letter**”). The Company is concurrently publicly filing the Registration Statement on Form S-1 (the “**Registration Statement**”), which includes changes to reflect the response to the Staff’s comment and other updates.

For reference purposes, the text of the Comment Letter has been reproduced herein with responses below each numbered comment. For your convenience, we have italicized the reproduced Staff comments from the Comment Letter. Unless otherwise indicated, page references in the descriptions of the Staff’s comments refer to Amendment No. 2 to the Draft Registration Statement, and page references in the responses refer to the Registration Statement. All capitalized terms used and not otherwise defined herein shall have the meanings set forth in the Registration Statement.

**Amendment No. 2 to Draft Registration Statement on Form S-1****Business****Phase 1 clinical development and results, page 135**

1. *We note your discussion of the results of your Phase 1 trial of MBX 2109 and the separate Phase 1 trial of TransCon PTH. Please revise your disclosure to briefly describe the limitations of cross-study comparisons as opposed to head-to-head comparisons.*

**RESPONSE:** The Company acknowledges the Staff’s comment and respectfully advises the Staff that it has revised the disclosure on page 136 of the Registration Statement in response to the Staff’s comment.

If you should have any questions concerning the enclosed matters, please contact the undersigned at (212) 813-8853.

Sincerely,

/s/ Edwin M. O’Connor

Edwin M. O’Connor, Esq.

Enclosures

cc:

P. Kent Hawryluk, *MBX Biosciences, Inc.*  
Richard Bartram, *MBX Biosciences, Inc.*  
Mitchell S. Bloom, Esq., *Goodwin Procter LLP*  
Daniel Hughes, Esq., *Goodwin Procter LLP*