

May 18, 2020

Lloyd M. Segal
Chief Executive Officer
Repare Therapeutics Inc.
7210 Frederick-Banting, Suite 100
St-Laurent, Qu bec, Canada H4S 2A1

Inc.

Draft Registration Statement on Form S-1
2020

Re: Repare Therapeutics
Amendment No. 1 to
Submitted May 12,
CIK No. 0001808158

Dear Mr. Segal:

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

Intellectual Property, page 127

1. We note your response to prior comment 11. As indicated in your response, please revise your disclosure to clarify that the SL pairs that you may identify would not be patent-eligible.

Principal Shareholders, page 172

2. We note your disclosure in footnote 2 that Todd Foley may, collectively with the other members of such entities, be deemed to share voting and investment power with respect to the shares held by each of the MPM Entities. Please ensure that you have identified all natural persons who have or share beneficial ownership of the securities held by each of

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the MPM Entities. Please also expand your disclosure in footnotes 4 and 5 to provide the disclosure requested by prior comment 15.

You may contact Tracey McKoy at (202) 551-3772 or Kate Tillan at (202) 551-3604 if you have questions regarding comments on the financial statements and related matters. Please contact Tim Buchmiller at (202) 551-3635 or Celeste Murphy at (202) 551-3257 with any other questions.

FirstName LastNameLloyd M. Segal
Corporation Finance
Comapany NameRepare Therapeutics Inc.
Sciences
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cc: Divakar Gupta, Esq
FirstName LastName

Sincerely,
Division of
Office of Life