

Divakar Gupta +1 212 479 6474 dgupta@cooley.com

September 17, 2020

U.S. Securities and Exchange Commission Division of Corporation Finance 100 F Street, N.E. Washington, DC 20549

Attn: Li Xiao

Angela Connell Alan Campbell Suzanne Hayes

Re: Taysha Gene Therapies, Inc.

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

Filed September 8, 2020 File No. 333-248559

Ladies and Gentlemen:

On behalf of Taysha Gene Therapies, Inc. (the "*Company*"), we are providing this letter in response to the comments of the staff (the "*Staff*") of the U.S. Securities and Exchange Commission (the "*Commission*") Division of Corporation Finance contained in its letter, dated September 16, 2020 (the "*Comment Letter*"), relating to the Company's Amendment No. 1 to Registration Statement on Form S-1, filed on September 8, 2020 (the "*Registration Statement*").

The Company is concurrently filing Amendment No. 2 to its Registration Statement on Form S-1 ("Amendment No. 2"), which reflects changes made in response to the comments contained in the Comment Letter.

The numbering of the paragraphs below corresponds to the numbering of the comments contained in the Comment Letter, which for your convenience we have incorporated into this response letter in italics. Page references in the text of this response letter correspond to the page numbers of Amendment No. 2. Capitalized terms used in this letter but not otherwise defined in this letter shall have the meanings set forth in Amendment No. 2.

Cooley LLP 55 Hudson Yards New York, NY 10001-2157 t: (212) 479-6000 f: (212) 479-6275 cooley.com



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Amendment No. 1 to Registration Statement on Form S-1 filed September 8, 2020

Our Pipeline, page 2

- 1. We note your response to prior comment 3 and reissue our comment. Please revise your table to depict the current status of your product candidates in a manner that is consistent with the regulatory process for drug development. Including the following changes:
 - We will not object to separate columns for discovery and preclinical, but object to a separate column for "construct selection" as that should be considered part of the discovery and/or preclinical work.
 - The Term "IND-enabling" assumes the outcome of the preclinical work, as the FDA will determine whether the results of the preclinical activities support an IND. Please revise your table to clarify that the second column refers to preclinical work.
 - With respect to the column heading "Pivotal Trial," our concern is that the table depicts the status of the product candidate in a manner that is not consistent with the regulatory process for drug development with separate column for phases 1, 2 and 3. We will not object to columns for phase 1/2 and/or 2/3 trials if the trials are designed to meet the requirements of both phases represented.
 - With respect to "Clinical expected..." text for TSHA-101, TSHA-102, TSHA-103 and TSHA-104, please revise to indicate
 when you expect to file an IND. To the extent you have already submitted an IND, we have no further concerns with respect
 to the current disclosure.

In response to the Staff's comment, the Company has revised the pipeline chart on pages 2 and 110 of Amendment No. 2.

History and Team, page 7

2. We note your response to comment 7. As noted in your response, the identification appears to suggest that potential investors may consider investments made by these institutional 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 institutional 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.

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In response to the Staff's comment, the Company has revised the disclosure on pages 7 and 110 of Amendment No. 2.

Exhibits

3. Please file the employment agreement or offer letter, as applicable, with each of Kamran Alam and Suyash Prasad as exhibits to your registration statement.

In response to the Staff's comment, the Company has filed the form of amended and restated offer letter that it intends to enter into with Kamran Alam and Suyash Prasad as Exhibit 10.12 to Amendment No. 2. The Company respectfully advises the Staff that it has not yet entered into amended and restated offer letters with Mr. Alam and Dr. Prasad but it intends to do so following the offering. Consistent with the Company's disclosure with respect to the amended and restated employment agreement that it expects to enter into with RA Session II following the offering, the Company has revised the disclosure on pages 169 and 170 of Amendment No. 2 to describe the material terms of such amended and restated offer letters. The Company intends to file the amended and restated offer letters, and the amended and restated employment agreement with Mr. Session, upon the execution of such agreements following the offering.

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Please direct any questions or further comments concerning the Registration Statement or this response letter to either the undersigned at (212) 479-6474 or Madison Jones of Cooley LLP at (202) 728-7087.

Sincerely,

/s/ Divakar Gupta

Divakar Gupta

cc: RA Session II, Taysha Gene Therapies, Inc. Kamran Alam, Taysha Gene Therapies, Inc. Seo Salimi, Goodwin Procter LLP

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