

November 18, 2020

Sanjay S. Shukla, M.D., M.S.
President and Chief Executive Officer
aTyr Pharma, Inc.
3545 John Hopkins Court, Suite 250
San Diego, CA 92121

Re: aTyr Pharma, Inc.
Registration

Statement on Form S-3

Filed November 16,

2020

File No. 333-250095

Dear Mr. Shukla:

This is to advise you that we have not reviewed and will not review your registration statement.

Please refer to Rules 460 and 461 regarding requests for acceleration. We remind you that the company and its management are responsible for the accuracy and adequacy of their disclosures, notwithstanding any review, comments, action or absence of action by the staff.

Please contact David

Gessert at 202-551-2326 with any questions.

Sincerely,

Division of Corporation Finance

Office of Life Sciences