

August 23, 2021

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

2021

Filed August 11,

File No. 333-258725

Dear Dr. 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 Alan

Campbell at 202-551-4224 with any questions.

Sincerely,

Division of Corporation Finance

Office of Life Sciences

cc:

Sean M. Clayton