

May 24, 2019

Sanjay Shukla  
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 May 22, 2019  
File No. 333-231658

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 Dorrie Yale at 202-551-8776 with any questions.

Sincerely,

Division of

Office of

Corporation Finance

Healthcare & Insurance

cc: Mitzi Chang, Esq. - Goodwin Procter LLP