

aTyr Pharma, Inc.  
3545 John Hopkins Court, Suite 250  
San Diego, California 92121

April 5, 2022

**VIA EDGAR**

U.S. Securities and Exchange Commission  
Division of Corporation Finance  
100 F Street, N.E.  
Washington, D.C. 20549  
Attn: Dorrie Yale

**Re: aTyr Pharma, Inc.  
Registration Statement on Form S-3 (File No. 333-263585)  
Request for Acceleration of Effective Date**

Ladies and Gentlemen:

Pursuant to Rule 461 under the Securities Act of 1933, as amended, aTyr Pharma, Inc. (the “**Company**”) hereby requests that the Securities and Exchange Commission (the “**Commission**”) accelerate the effective date of the above-referenced Registration Statement on Form S-3 (the “**Registration Statement**”) and declare the Registration Statement effective as of 4:00 p.m. Eastern time, on April 8, 2022, or as soon thereafter as possible, or such , or at such other time as the Company or its legal counsel, Cooley LLP, may request by telephone to the staff of the Commission. The Company hereby authorizes each of Charles J. Bair and Alexa M. Ekman of Cooley LLP to make such a request on its behalf.

Once the Registration Statement has been declared effective, please orally confirm that event with Alexa M. Ekman of Cooley LLP at (858) 550-6183 or aekman@cooley.com.

Sincerely,

**ATYR PHARMA, INC.**

By: /s/ Jill M. Broadfoot  
Jill M. Broadfoot  
Chief Financial Officer