

**UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549**

**FORM 8-K**

**CURRENT REPORT**

**Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934**

**Date of Report (Date of earliest event reported): May 20, 2020**

**ATYR PHARMA, INC.**

(Exact name of registrant as specified in its charter)

**Delaware**  
(State or other jurisdiction  
of incorporation)

**001-37378**  
(Commission File Number)

**20-3435077**  
(IRS Employer  
Identification No.)

**3545 John Hopkins Court, Suite #250  
San Diego**

(Address of Principal Executive Offices)

**92121**  
(Zip Code)

**Registrant's telephone number, including area code: (858) 731-8389**

**Not Applicable**  
(Former Name or Former Address, if Changed Since Last Report)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligations of the registrant under any of the following provisions:

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

**Securities registered pursuant to Section 12(b) of the Act:**

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, par value \$0.001 per share	LIFE	The Nasdaq Capital Market

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 or Rule 12b-2 of the Securities Exchange Act of 1934.

Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

**Item 8.01****Other Events.**

aTyr Pharma, Inc. (the “Company”) is filing this Current Report on Form 8-K for the purpose of incorporating by reference into the Company’s Registration Statement on Form S-3, as amended (File No. 333-231658) the items filed herewith as Exhibits 5.1 and 23.1.

**Item 9.01****Financial Statements and Exhibits.**

## (d) Exhibits

<b>Exhibit No.</b>	<b>Description</b>
5.1	<a href="#"><u>Opinion of Cooley LLP</u></a>
23.1	<a href="#"><u>Opinion of Cooley LLP (included in Exhibit 5.1)</u></a>

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**SIGNATURE**

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

**ATYR PHARMA, INC.**

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

Date: May 20, 2020

Sean M. Clayton  
+1 858 550 6034  
sclayton@cooley.com

## Exhibit 5.1

May 20, 2020

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

Ladies and Gentlemen:

You have requested our opinion as counsel to aTyr Pharma, Inc., a Delaware corporation (the "**Company**"), with respect to certain matters in connection with the offering by the Company of \$6,680,000 of shares of the Company's common stock, par value \$0.001 per share (the "**Shares**"), pursuant to the Registration Statement on Form S-3 (File No. 333-231658) (as amended, the "**Registration Statement**") filed with the Securities and Exchange Commission (the "**Commission**") under the Securities Act of 1933, as amended (the "**Act**"), the prospectus included within the Registration Statement (the "**Base Prospectus**") and the prospectus supplement filed with the Commission pursuant to Rule 424(b) promulgated under the Act relating to the offering of the Shares (together with the Base Prospectus, the "**Prospectus**"). The Shares are to be sold by the Company in accordance with a Common Stock Sales Agreement, dated May 21, 2019, between the Company and H.C. Wainwright & Co., LLC, as amended (the "**Agreement**"), as described in the Prospectus.

In connection with this opinion, we have examined and relied upon the Registration Statement and the Prospectus, the Agreement, the Company's Restated Certificate of Incorporation, as amended, its Amended and Restated Bylaws, each as currently in effect, and originals or copies certified to our satisfaction of such records, documents, certificates, memoranda and other instruments as in our judgment are necessary or appropriate to enable us to render the opinion expressed below. In rendering this opinion, we have assumed the genuineness of all signatures; the authenticity of all documents submitted to us as originals; the conformity to originals of all documents submitted to us as copies; the accuracy, completeness and authenticity of certificates of public officials and the due authorization, execution and delivery by all persons other than by the Company of all documents where authorization, execution and delivery are a prerequisite to the effectiveness thereof. As to certain factual matters, we have relied upon a certificate of an officer of the Company and have not independently verified such matters.

We have assumed (i) that each sale of Shares will be duly authorized by the Board of Directors of the Company, a duly authorized committee thereof or a person or body pursuant to an authorization granted in accordance with Section 152 of the General Corporation Law of the State of Delaware (the "**DGCL**"), (ii) that no more than 3,500,000 Shares will be sold under the Agreement pursuant to the Prospectus and (iii) that the price at which the Shares are sold will equal or exceed the par value of the Shares. We express no opinion to the extent that future issuances of securities of the Company and/or anti-dilution adjustments to outstanding securities

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of the Company cause the number of shares of the Company's common stock outstanding or issuable upon conversion or exercise of outstanding securities of the Company to exceed the number of Shares then issuable under the Agreement.

Our opinion herein is expressed solely with respect to the DGCL. Our opinion is based on these laws as in effect on the date hereof. We express no opinion to the extent that any other laws are applicable to the subject matter hereof and express no opinion and provide no assurance as to compliance with any federal or state securities law, rule or regulation.

On the basis of the foregoing, and in reliance thereon, we are of the opinion that the Shares, when sold and issued against payment therefor in accordance with the Agreement, the Registration Statement and the Prospectus, will be validly issued, fully paid and nonassessable.

We consent to the reference to our firm under the caption "Legal Matters" in the Prospectus and to the filing of this opinion as an exhibit to a Current Report on Form 8-K to be filed with the Commission for incorporation by reference into the Registration Statement.

Very truly yours,

Cooley LLP

By: /s/ Sean M. Clayton  
Sean M. Clayton

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