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

November 18, 2016
Date of Report (Date of earliest event reported)

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, California 92121

(Address of principal executive offices, including zip code)

(858) 731-8389

(Registrant's telephone number, including area code)

k 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 wing 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))

Item 1.01 Entry into a Material Definitive Agreement.

Loan and Security Agreement

On November 18, 2016, aTyr Pharma, Inc. (the "Company") entered into a Loan and Security Agreement (the "Loan Agreement") with Silicon Valley Bank ("SVB") and Solar Capital Ltd. ("Solar") (collectively, the "Lenders"). The Loan Agreement provides for up to \$20.0 million in new term loans (the "Term Loan Facility"). The Term Loan Facility is structured in three tranches, as follows: (i) the first tranche of \$10.0 million ("First Tranche") was funded on November 18, 2016; (ii) the second tranche of \$5.0 million ("Second Tranche") may be drawn down by the Company at any time before the earlier of June 30, 2017 or an event of default, at the Company's discretion, subject to achievement of certain financial and clinical milestones, and (iii) the third tranche of \$5.0 million (the "Third Tranche") may be drawn down by the Company at any time after June 30, 2017 and before the earlier of December 31, 2017 or an event of default, at the Company's discretion, subject to achievement of certain financial and clinical milestones. The availability of the Third Tranche is not contingent upon drawing the Second Tranche, but all milestones for the Second Tranche must be achieved prior to drawing the Third Tranche.

The Term Loan Facility repayment schedule provides for interest only payments through December 1, 2017 or June 1, 2018 (if the Company draws the Second Tranche), followed by consecutive equal monthly payments of principal and interest in arrears starting on such applicable date and continuing through the maturity date of November 18, 2020. The Loan Agreement provides for an interest rate equal to the sum of (i) the Prime Rate, as reported in The Wall Street Journal on the last date of the month preceding the month in which interest will accrue, plus (ii) 4.10%. The Loan Agreement also provides for a final interest payment equal to 8.75% of the funded amount, which is due when the term loan becomes due or upon the prepayment of the Term Loan Facility. The Company has the option to prepay the outstanding balance of the Term Loan Facility in full, subject to a prepayment fee ranging from 1.0% to 3.0% depending upon when the prepayment occurs, including any non-usage fees. The Loan Agreement provides for a 2.0% non-usage fee for any unfunded amount in the event the Company does not draw the Second Tranche and Third Tranche, payable no later than the expiration date for the Second Tranche or Third Tranche, as applicable, or the date of cancellation of the Term Loan Facility due to prepayment or an event of default.

The Company has granted SVB, as Collateral Agent for the ratable benefit of the Lenders, a security interest in substantially all of the Company's assets, other than intellectual property, to secure the payment of all amounts owed to the Lenders under the Loan Agreement. However, pursuant to the terms of a negative pledge arrangement, the Company has agreed not to encumber any of the intellectual property of the Company. Pursuant to the terms of the Loan Agreement, the Company is bound by certain affirmative covenants setting forth actions that are required during the term of the Loan Agreement, including, without limitation, certain information delivery requirements, obligations to maintain certain insurance and certain notice requirements. Additionally, the Company is bound by certain negative covenants setting forth certain actions that are not permitted to be taken during the term of the Loan Agreement without the Lenders' consent, including, without limitation, incurring certain additional indebtedness, entering into certain mergers or acquisitions or incurring any non-permitted lien or other encumbrance of the Company's assets. In addition, subject to certain exceptions, the Company is required to maintain with SVB its primary deposit accounts, securities accounts and commodity accounts during the term of the Loan Agreement.

The Loan Agreement also contains customary indemnification obligations and customary events of default, including, among other things, the Company's failure to fulfill certain of its obligations under the Loan Agreement, the occurrence of a material adverse change, a material impairment of the prospect of repayment of any portion of the Term Loan Facility, or a material impairment in the perfection or priority of the Lenders' lien in the collateral or in the value of such collateral. Upon the occurrence of an event of default under the Loan Agreement and following applicable cure periods, a default interest rate of an additional 5.0% will be applied to outstanding loan balances, and the Lenders may declare all outstanding obligations immediately due and payable and take such other actions as set forth in the Loan Agreement.

Warrants

In connection with the Loan Agreement, the Company agreed to issue warrants to each of SVB and Solar to purchase that number of shares of the Company's common stock equal to 3% of the amount loaned under the Loan Agreement by SVB and Solar, respectively, divided by the average closing price of the Company's common stock for the 10 trading days prior to funding, which average closing price is also the exercise price per share for the warrants. At the initial funding of the Term Loan Facility on November 18, 2016, the Company issued to SVB a warrant to purchase an aggregate of 47,771 shares of the Company's common stock (the "SVB Warrant") and to Solar a warrant to purchase an aggregate of 47,771 shares of the Company's common stock (the "Solar Warrant" and, together with the SCB Warrant, the "Warrants"). The exercise price for each Warrant is \$3.14 per share. The Warrants are immediately exercisable and will expire on November 18, 2023, provided that such Warrants have not been previously exercised or have expired in connection with certain fundamental transactions involving the Company.

The foregoing is only a brief description of the Loan Agreement and the Warrants, does not purport to be a complete description of the rights and obligations of the partiers thereunder and is qualified in its entirety by reference to the Loan Agreement and the Warrants which will be filed as exhibits to the Company's Annual Report on Form 10-K for the year ended December 31, 2016.

Item 1.02 Termination of a Material Definitive Agreement.

Of the \$10.0 million funded in the First Tranche of the Term Loan Facility described above, approximately \$2.6 million was used to repay in full the Company's principal and interest obligations under the prior loan from SVB pursuant to that certain Loan and Security Agreement by and between the Company and SVB, dated April 25, 2012, as amended by First Amendment to Loan and Security Agreement by and between the Company and SVB, dated July 24, 2013(the "Prior Loan Agreement"). The Prior Loan Agreement was terminated as a result of the full prepayment of indebtedness thereunder on November 18, 2016. As the Prior Loan Agreement was replaced with a new loan facility with SVB, the Company did not pay any termination or other fees in connection with the repayment of amounts due under the Prior Loan Agreement. To the extent applicable, the information set forth under Item 1.01 of this Current Report on Form 8-K is hereby incorporated in this Item 1.02 by reference.

Item 2.03 Creation of a Direct Financial Obligation or an Obligation under an Off-Balance Sheet Arrangement of a Registrant.

The information contained in Item 1.01 of this Current Report on Form 8-K is hereby incorporated by reference in this Item 2.03.

Item 3.02 Unregistered Sales of Equity Securities.

The information contained in Item 1.01 of this Current Report on Form 8-K is hereby incorporated by reference in this Item 3.02.

The Warrants described in Item 1.01 above were offered and sold in reliance upon the exemption from registration provided by Section 4(a)(2) under the Securities Act of 1933, as amended (the "Securities Act"). The Warrants contain representations to support the Company's reasonable belief that each of the recipients of such securities had access to information concerning the Company's operations and financial condition, that each such recipient is acquiring the securities for its own account and not with a view to the distribution thereof, and that each such recipient is an "accredited investor" as defined by Rule 501 promulgated under the Securities Act.

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.

/s/ John D. Mendlein John D. Mendlein, Ph.D. Chief Executive Officer

Date: November 21, 2016