
**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 13, 2019

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
(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))
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Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§240.12b-2 of this chapter).

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.

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 |

Item 2.02 Results of Operations and Financial Condition.

On May 13, 2019, aTyr Pharma, Inc. announced financial results for the quarter ended March 31, 2019 in the earnings release attached hereto as Exhibit 99.1.

The information under this Item 2.02, including Exhibit 99.1 hereto is being furnished and shall not be deemed “filed” for the purposes of Section 18 of the Securities and Exchange Act of 1934, as amended (the “Exchange Act”), or otherwise subject to the liabilities of that section, nor shall such information be deemed incorporated by reference into any filing under the Securities Act of 1933, as amended or the Exchange Act, except as expressly set forth by specific reference in such filing.

Item 9.01 Financial Statements and Exhibits.

(d) Exhibits.

99.1 [Press Release of aTyr Pharma, Inc. dated May 13, 2019.](#)

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/ Sanjay S. Shukla
Sanjay S. Shukla, M.D., M.S.
President and Chief Executive Officer

Date: May 13, 2019

IMMEDIATE RELEASE**Contact:**

Joyce Allaire

Managing Director, LifeSci Advisors, LLC

jallaire@lifesciadvisors.com**aTyr Pharma Announces First Quarter 2019 Results and Provides Corporate Update***Phase 1b/2a proof-of-concept clinical trial of ATYR1923 in pulmonary sarcoidosis patients ongoing**Advanced lead position in Neuropilin-2 (NRP-2) biology with inaugural NRP-2 summit**Company to host conference call and webcast today at 5:00pm EDT / 2:00 PDT*

SAN DIEGO – May 13, 2019 – aTyr Pharma, Inc. (Nasdaq: LIFE), a biotherapeutics company engaged in the discovery and development of innovative medicines based on novel immunological pathways, today announced first quarter 2019 results and provided a corporate update.

“During the first quarter, we continued to execute on our Phase 1b/2a study of our lead therapeutic candidate, ATYR1923, a selective NRP-2 inhibitor, in patients with pulmonary sarcoidosis, and we look forward to reporting interim results in the fourth quarter of this year,” said Dr. Sanjay Shukla, President and Chief Executive Officer of aTyr. “At the same time, we continued to advance our understanding of the emerging role of NRP-2 in the modulation of immune responses. We recently held an inaugural summit meeting of leading experts in the field of NRP-2 biology to discuss the down-regulation of the innate and adaptive immune systems and potential clinical utility across a broad range of inflammatory disease states.”

First Quarter 2019 and Subsequent Period Highlights

- Advanced its ongoing Phase 1b/2a clinical trial of ATYR1923 in pulmonary sarcoidosis patients, with interim data expected during the fourth quarter of this year.
- Hosted an inaugural Neuropilin-2 (NRP-2) Summit Meeting featuring key researchers from the United States and Europe to discuss the most recent discoveries relating to the development of therapeutics directed to the NRP-2 co-receptor, and related signaling pathways.
- Closed a \$5 million registered direct investment led by Federated Kaufmann Small Cap Fund.
- Announced a research collaboration and option agreement with global biotherapeutics leader CSL Behring to accelerate development of product candidates derived from up to four tRNA synthetases from aTyr’s preclinical pipeline.

Research Highlights

- Announced an upcoming poster presentation at the American Thoracic Society 2019 International Conference, which is being held May 19-22 in Dallas. The poster will describe preclinical findings from a study of ATYR1923 in murine models of interstitial lung diseases (ILDs), including sclerodermatous chronic graft-versus-host disease (scl cGvHD), Saccharopolyspora rectivirgula-induced chronic hypersensitivity pneumonitis (CHP), propionibacterium acnes-induced pulmonary granulomatosis (sarcoidosis) and rheumatoid arthritis-associated interstitial lung disease (RA-ILD). ATYR1923 treatment significantly decreased both skin and lung fibrosis in the scl cGvHD model, and it also reduced lung protein levels of several fibrosis-related cytokines or chemokines in the highly inflammatory experimental CHP and sarcoidosis models.
- Presented a poster at the 2019 American Association for Cancer Research (AACR) summarizing recent data from the Company's collaboration and ongoing pilot study with the University of Nebraska Medical Center aimed at advancing NRP-2 biology and exploring potential therapeutic opportunities for ATYR1923. The pilot study was led by Dr. Kaustubh Datta, a recognized expert in the field of NRP-2 biology.
- Presented preclinical data at Keystone Symposia 2019 Conference in February demonstrating, for the first time, ATYR1923's ability to bind to NRP-2 and down-regulate myeloid cells, specifically neutrophils, during lung inflammation. These findings help support aTyr's belief in the mechanism of action of ATYR1923 to suppress immune engagement in pulmonary sarcoidosis as well as other interstitial lung diseases.

First Quarter 2019 Financial Results and Cash Position

Research and development expenses were \$3.3 million and \$6.2 million for the three months ended March 31, 2019 and 2018, respectively. General and administrative expenses were \$2.5 million and \$4.1 million for the three months ended March 31, 2019 and 2018, respectively. The decreases for both research and development expenses and general and administrative expenses were primarily related to the Company's corporate restructuring announced in May 2018, where aTyr announced its focused development efforts on the clinical advancement of ATYR1923 along with related reductions in headcount and personnel-related costs and other cost saving measures.

As of March 31, 2019, aTyr had \$43.0 million in cash, cash equivalents and investments. Subsequent to the end of the quarter, the Company raised \$5.0 million in gross proceeds through a registered direct investment led by Federated Kaufmann Small Cap Fund.

Conference Call and Webcast Details

aTyr Pharma will host a conference call and webcast today at 5:00 p.m. Eastern Time / 2:00 p.m. Pacific Time to discuss its financial results and provide a corporate update. Interested parties may access the call by dialing toll-free (844) 358-9116 from the US, or (209) 905-5951 internationally, and using conference ID 4868007. Links to a live audio webcast and replay may be accessed on the aTyr website events page at: <http://investors.atyrpharma.com/events-and-webcasts>. An audio replay will be available for at least 90 days following the event.

About ATYR1923

aTyr is developing ATYR1923 as a potential therapeutic for patients with interstitial lung diseases. ATYR1923, a fusion protein comprised of the immuno-modulatory domain of histidyl tRNA synthetase (HARS) fused to the FC region of a human antibody, is a selective modulator of Neuropilin-2 that downregulates the innate and adaptive immune response in inflammatory disease states. aTyr initiated a proof-of-concept Phase 1b/2a trial evaluating ATYR1923 in patients with pulmonary sarcoidosis in the fourth quarter of 2018. This Phase 1b/2a study is a multi-ascending dose, placebo-controlled, first-in-patient study of ATYR1923 that has been designed to evaluate the safety, tolerability, steroid sparing effect, immunogenicity and pharmacokinetics (PK) profile of multiple doses of ATYR1923. For the Phase 1b/2a trial, aTyr is collaborating with the Foundation for Sarcoidosis Research (FSR), the nation's leading nonprofit organization dedicated to finding a cure for sarcoidosis and improving care for sarcoidosis patients. Under the terms of the collaboration, FSR will assist with clinical trial site initiation and patient enrollment.

About aTyr

aTyr is a biotherapeutics company engaged in the discovery and development of innovative medicines based on novel immunological pathways. aTyr's research and development efforts are concentrated on a newly discovered area of biology, the extracellular functionality of tRNA synthetases. aTyr has built a global intellectual property estate directed to a potential pipeline of protein compositions derived from 20 tRNA synthetase genes. aTyr is focused on the therapeutic translation of the Resokine pathway, comprised of extracellular proteins derived from the histidyl tRNA synthetase gene family. ATYR1923 is a clinical-stage product candidate which binds to the neuropilin-2 receptor and is designed to down-regulate immune engagement in interstitial lung diseases and other immune-mediated diseases. For more information, please visit <http://www.atyrpharma.com>.

Forward-Looking Statements

This press release contains forward-looking statements within the meaning of the Private Litigation Reform Act. Forward-looking statements are usually identified by the use of words such as "anticipates," "believes," "estimates," "expects," "intends," "may," "plans," "projects," "seeks," "should," "will," and variations of such words or similar expressions. We intend these forward-looking statements to be covered by such safe harbor provisions

for forward-looking statements and are making this statement for purposes of complying with those safe harbor provisions. These forward-looking statements, including statements regarding our projected cash expenditures, the potential therapeutic benefits and applications of our product candidates; our ability to successfully advance our product candidates, undertake certain development activities (such as the initiation of clinical trials, clinical trial enrollment, the conduct of clinical trials and the announcement of top-line results) and accomplish certain development goals, and the timing of such events; and the scope and strength of our intellectual property portfolio. These forward-looking statements also reflect our current views about our plans, intentions, expectations, strategies and prospects, which are based on the information currently available to us and on assumptions we have made. Although we believe that our plans, intentions, expectations, strategies and prospects, as reflected in or suggested by these forward-looking statements, are reasonable, we can give no assurance that the plans, intentions, expectations or strategies will be attained or achieved. All forward-looking statements are based on estimates and assumptions by our management that, although we believe to be reasonable, are inherently uncertain. Furthermore, actual results may differ materially from those described in these forward-looking statements and will be affected by a variety of risks and factors that are beyond our control including, without limitation, risks associated with the discovery, development and regulation of our product candidates, the risk that we may cease or delay preclinical or clinical development activities for any of our existing or future product candidates for a variety of reasons (including difficulties or delays in patient enrollment in current and planned clinical trials), and the risk that we may not be able to raise the additional funding required for our business and product development plans, as well as those risks set forth in our most recent Annual Report on Form 10-K, Quarterly Reports on Form 10-Q and in our other SEC filings. Except as required by law, we assume no obligation to update publicly any forward-looking statements, whether as a result of new information, future events or otherwise.

ATYR PHARMA INC.
Condensed Consolidated Statements of Operations
(in thousands, except share and per share data)

| | Three Months Ended March 31, | |
|--|------------------------------|-------------|
| | 2019 | 2018 |
| | (unaudited) | |
| Operating expenses: | | |
| Research and development | \$ 3,345 | \$ 6,150 |
| General and administrative | 2,532 | 4,070 |
| Total operating expenses | 5,877 | 10,220 |
| Loss from operations | (5,877) | (10,220) |
| Total other expense, net | (260) | (447) |
| Net loss | \$ (6,137) | \$ (10,667) |
| Net loss per share attributable to common stock holders, basic and diluted | \$ (0.18) | \$ (0.36) |
| Weighted average common stock shares outstanding, basic and diluted | 33,823,909 | 29,795,466 |

ATYR PHARMA INC.
Condensed Consolidated Balance Sheets
(in thousands)

| | March 31, | |
|---|-------------|-----------|
| | 2019 | 2018 |
| | (unaudited) | |
| Cash, cash equivalents and available-for-sale investments | \$ 43,019 | \$ 49,545 |
| Other assets | 1,881 | 1,348 |
| Property and equipment, net | 1,692 | 1,853 |
| Right-of-use assets | 3,323 | — |
| Total assets | \$ 49,915 | \$ 52,746 |
| Accounts payable, accrued expenses and other liabilities | \$ 2,703 | \$ 3,066 |
| Current portion of operating lease liability | 681 | — |
| Long-term operating lease liability, net of current portion | 2,815 | — |
| Current portion of long-term loans, net of debt issuance costs and discount | 7,791 | 7,767 |
| Term loans, net of current portion and debt issuance costs and discount | 6,440 | 8,263 |
| Stockholders' equity | 29,485 | 33,650 |
| Total liabilities and stockholders' equity | \$ 49,915 | \$ 52,746 |