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): September 10, 2023

ATYR PHARMA, INC.
(Exact name of registrant as specified in its charter)

Delaware	**001-37378**	**20-3435077**
(State or other jurisdiction of incorporation)	**(Commission File Number)**	**(IRS Employer Identification No.)**

10240 Sorrento Valley Road, Suite 300 San Diego, CA	**92121**
(Address of Principal Executive Offices)	**(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.

On September 10, 2023, aTyr Pharma, Inc. presented the results of a post-hoc analysis of data from its Phase 1b/2a study of efzofitimod in patients with pulmonary sarcoidosis in a poster at the European Respiratory Society International Congress 2023.

The poster presents findings from a pooled, post-hoc analysis of data from a Phase 1b/2a randomized, double-blind, placebo-controlled, multiple ascending dose (1.0, 3.0 and 5.0 mg/kg) 24-week study of efzofitimod in patients with pulmonary sarcoidosis receiving oral corticosteroid (OCS) dose ≥ 10.0 mg/day. Patients were randomized 1:2 (placebo:efzofitimod) and underwent a forced steroid taper in the first 8 weeks of the study. Dose dependent improvements in steroid burden, forced vital capacity (FVC) and patient reported outcomes (PRO) were noted, though the study was not powered for efficacy.

In this pooled analysis, the 3.0 mg/kg (N=8) and 5.0 mg/kg (N=9) efzofitimod arms were considered therapeutic, and pooled. The placebo (N=12) and 1.0 mg/kg (N=8) efzofitimod arm, which was considered subtherapeutic, were pooled. Time to relapse for steroid use (defined as dose of OCS increased after OCS taper to 5.0 mg or less of prednisone or equivalent for at least five consecutive days), rate of change for FVC and proportion of patients with changes that are multiples of the minimally clinically important difference (MCID) in PRO (Kings Sarcoidosis Questionnaire-Lung, or KSQ-L) were compared. Additionally, a responder endpoint was proposed (defined as reduction in OCS from baseline without worsening in FVC or PRO) and an analysis was performed. Key findings include:

1. 7.7% of patients in the therapeutic group relapsed for steroid use compared to 54.4% of patients in the placebo/subtherapeutic group (p=0.017);

2. The rate of change for FVC was significantly improved for the therapeutic group compared to the placebo/subtherapeutic group (p =0.035);

3. 52.9% of patients in the therapeutic group showed an increase ≥12 for KSQ-L (3 times MCID) compared with 15.0% in the placebo/subtherapeutic group (p=0.032); and

4. 64.7% of patients in the therapeutic group achieved response compared to 20.0% in the placebo/subtherapeutic group (p=0.008).

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: September 11, 2023