aTyr Pharma Announces First Major Review Article for Efzofitimod Published in the Journal Sarcoidosis, Vasculitis and Diffuse Lung Diseases

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Paper highlights efzofitimod as a first-in-class biologic with significant anti-inflammatory properties

SAN DIEGO, March 30, 2023 (GLOBE NEWSWIRE) -- aTyr Pharma, Inc. (Nasdaq: LIFE), a biotherapeutics company engaged in the discovery and development of first-in-class medicines from its proprietary tRNA synthetase platform, today announced the publication of a review article, titled, "Efzofitimod: a novel anti-inflammatory agent for sarcoidosis," in the peer-reviewed journal *Sarcoidosis, Vasculitis and Diffuse Lung Diseases*. The publication is available on the journal's website and at: https://doi.org/10.36141/svdld.v40i1.14396.

In the paper, the authors, led by Robert P. Baughman, M.D., Professor of Medicine at the University of Cincinnati Medical Center, describe the mechanism for efzofitimod as it relates to the granulomatous inflammation central to the pathophysiology of sarcoidosis, including the role of its binding partner neuropilin-2 (NRP2), a cell surface receptor that is highly expressed in sarcoid granulomas. The authors also review the preclinical and clinical data generated for efzofitimod that support its anti-inflammatory properties and the potential for it to be a novel therapeutic approach to immune-mediated fibrotic lung diseases such as pulmonary sarcoidosis.

"This publication highlights efzofitimod as a first-in-class biologic for the treatment of sarcoidosis based on a review of the evolving mechanistic understanding of this novel immunomodulator and the clinical data generated in pulmonary sarcoidosis patients," said Dr. Baughman. "Oral corticosteroids remain the cornerstone of treatment for symptomatic sarcoidosis, but long-term treatment often comes with significant side effects and reduced quality of life. A treatment such as efzofitimod, which may reduce steroid burden while improving lung function and quality of life measures, is greatly needed—and long overdue— for patients with this disease."

"This first-ever review recognizes the potential of efzofitimod to be a transformative therapy for patients with pulmonary sarcoidosis," said Sanjay S. Shukla, M.D., M.S., President and CEO of aTyr. "EFZO-FIT™ is the first Phase 3 interventional study to be conducted in pulmonary sarcoidosis and is currently enrolling patients at multiple centers in the U.S, Europe and Japan. We believe this study presents a landmark opportunity to generate the most comprehensive investigational dataset for a treatment for sarcoidosis and represents a historic step forward in the attempt to develop a new treatment for patients with this disease."

Efzofitimod is a first-in-class immunomodulator that downregulates innate immune responses in uncontrolled inflammatory disease states via selective modulation of NRP2. Efzofitimod is currently being investigated in patients with pulmonary sarcoidosis, a major form of interstitial lung disease (ILD), in the global pivotal Phase 3 EFZO-FIT ™study and a Phase 2 study in patients with systemic sclerosis (SSc, or scleroderma)-associated ILD is planned to start this year.

About Pulmonary Sarcoidosis

Sarcoidosis is an immune-mediated disease characterized by the formation of granulomas, clumps of inflammatory cells, in one or more organs of the body, predominantly in the lungs. Approximately 200,000 Americans live with pulmonary sarcoidosis and the prognosis ranges from benign and self-limiting to chronic, debilitating disease, with 1 in 5 cases resulting in fibrosis, or scarring, of the lungs, which causes permanent loss of lung function and in many cases death. Current treatment options include corticosteroids and other immunosuppressive therapies, which have limited efficacy and are associated with serious side effects that many patients cannot tolerate long-term.

About Efzofitimod

aTyr is developing efzofitimod as a potential therapeutic for patients with fibrotic lung disease. Efzofitimod, a fusion protein comprised of the immuno-modulatory domain of histidyl-tRNA synthetase fused to the FC region of a human antibody, is a selective modulator of neuropilin-2 that downregulates innate immunes response in inflammatory disease states. aTyr's lead indication for efzofitimod is pulmonary sarcoidosis, a major form of interstitial lung disease. Clinical proof-of-concept for efzofitimod was recently established in a Phase 1b/2a multiple-ascending dose, placebo-controlled study of efzofitimod in patients with pulmonary sarcoidosis, which demonstrated safety and a consistent dose response and trends of benefit of efzofitimod compared to placebo on key efficacy endpoints, including steroid reduction, lung function, clinical symptoms and inflammatory biomarkers. aTyr is currently conducting EFZO-FIT ™, a Phase 3 study of efzofitimod in pulmonary sarcoidosis patients.

About aTyr

aTyr is a biotherapeutics company engaged in the discovery and development of first-in-class medicines from its proprietary tRNA synthetase platform. aTyr's research and development efforts are concentrated on a newly discovered area of biology, the extracellular functionality and signaling pathways 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 and their extracellular targets. aTyr's primary focus is efzofitimod, a clinical-stage product candidate which binds to the neuropilin-2 receptor and is designed to downregulate immune engagement in fibrotic lung disease. For more information, please visit www.atyrpharma.com.

Forward-Looking Statements

This press release contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements are usually identified by the use of words such as "believes," "estimates," "expects," "intends," "may," "plans," "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 include

statements regarding potential therapeutic benefits of efzofitimod and plans with respect to certain clinical activities. 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, uncertainty regarding geopolitical and macroeconomic conditions, risks associated with the discovery, development and regulation of our product candidates, the risk that we or our partners 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 planned clinical trials), the possibility that existing collaborations could be terminated early, 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 Quarterly Report on Form 10-Q for the quarter ended December 31, 2022 filed with the SEC on March 14, 2023, 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.

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