aTyr Pharma to Present Data Identifying Fibrosis Target for tRNA Synthetase Candidate ATYR0101 at Keystone Symposia on Fibrosis Pathogenesis and Resolution

March 21, 2023

Findings confirm LTBP1, a key regulator of TGF-β, as binding partner for tRNA synthetase DARS fragment ATYR0101

Data indicates ATYR0101 may have therapeutic potential for fibrotic pathologies

SAN DIEGO, March 21, 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 that Leslie A. Nangle, Ph.D., Vice President, Research, will present findings from its platform in an oral presentation and poster at the Keystone Symposia on Fibrosis Pathogenesis and Resolution: From Mechanisms to Therapies, which is scheduled to take place March 19 – 23 in Banff, Alberta, Canada.

aTyr will present findings from its innovative tRNA synthetase platform that highlight ATYR0101, a potential therapeutic biologic based on a domain appended to Aspartyl-tRNA Synthetase (DARS) that is naturally occurring and selected through evolutionary intelligence to be released from cells to modulate extracellular signaling. ATYR0101 was found to bind to human fibroblasts and extracellular matrix deposited by fibroblasts via novel binding of latent transforming growth factor beta binding protein 1 (LTBP1). LTBP1 is an extracellular matrix protein and key regulator of transforming growth factor beta (TGF-β), a central player in the pathogenesis of fibrotic diseases. These findings indicate that ATYR0101 may have therapeutic potential in fibrotic pathologies.

Details of the oral and poster presentations appear below. The poster will be available on the aTyr website once presented.

Title: Identification of latent transforming growth factor beta binding protein 1 (LTBP1) as a binding partner of aspartyl-tRNA Synthetase
Authors: Tarsis F. Brust, Andrew Imfeld, Ying-Ting Wang, Yeeting Chong, Kristina Hamel, Alison Barber, Ann L. Menefee, Cory Soto, Gennyne Walker, Eileen Sun, Ryan A. Adams, and Leslie A. Nangle. aTyr Pharma, San Diego.
Oral Presentation: Workshop 2: Fibrosis Research Funding and Partnering Academia/Pharma
Oral Presentation Date and Time: Tuesday, March 21, 2023, from 2:30PM – 4:30PM PT
Poster Number: 1015
Poster Session: Poster Session 1
Poster Session Date and Time: Monday, March 20, 2023, from 7:30PM – 10:00PM PT

“These findings provide further evidence establishing the extracellular functionality of tRNA synthetase protein fragments selected by the pressure of evolution to play a distinct role in orchestrating homeostatic responses in complex biological systems,” said Leslie A. Nangle, Ph.D., Vice President, Research at aTyr. “In this case, the direct interaction of ATYR0101 with a known fibrotic target — LTBP1 — implicates its role in the fibrotic process and warrants further exploration and drug development efforts to identify disease areas where ATYR0101 may present an opportunity to generate a potential new therapeutic candidate.”

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 “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 include statements regarding potential further research and development activities related to, and potential utility of, the newly identified target; the potential therapeutic benefits and applications of our current and future product candidates, including ATYR0101; timelines and plans with respect to certain development activities; and certain development goals. 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 the COVID-19 pandemic, 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 Annual Report on Form 10-K for the year 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.

IMMEDIATE RELEASE

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