aTyr Pharma Presents Poster Demonstrating Functional Selectivity of Second Anti-NRP2 Antibody

June 10, 2021

Preclinical candidate is second to demonstrate selective blocking ability from in-house panel of antibodies targeting NRP2.

aNRP2-14 blocks Semaphorin 3F/NRP2 signaling pathways which are implicated in immune-mediated diseases.

SAN DIEGO, June 10, 2021 (GLOBE NEWSWIRE) -- aTyr Pharma, Inc. (Nasdaq: LIFE), a biotherapeutics company engaged in the discovery and development of innovative medicines based on novel biological pathways, today announced the presentation of a poster at the Antibody Engineering & Therapeutics Europe Virtual conference which was held June 8 – 10, 2021. The abstract and poster are available on the conference website.

The poster presents preclinical findings demonstrating *in vitro* and *in vivo* proof-of-concept that the anti-Neuropilin-2 (NRP2) antibody, aNRP2-14, is a high affinity, selective blocker of the Semaphorin 3F/NRP2 interaction. Class 3 Semaphorins are an important set of NRP2 ligands, with recent data implicating their role in sustaining chronic inflammation.

Details of the abstract and poster presentation are as follows:

Title: Engineering an anti-Neuropilin-2 (NRP2) antibody that selectively blocks NRP2 interactions with Semaphorin and Plexin
Authors: Kaitlyn Rauch, Luke Burman, Yanyan Geng, Liting Zhai, Yeeting E. Chong, Ann Menefee, Kristina Hamel, Zhiwen Xu, Nathaniel Bloom, Lauren Guy, Matt Seikkula, Christoph Burkart, Leslie A. Nangle. aTyr Pharma, San Diego, CA, Pangu Biopharma, Hong Kong.
Date: June 8 – 10, 2021

The poster is also available on the aTyr website.

“We are very excited to present these findings for aNRP2-14, which demonstrate the cutting-edge, in-house antibody engineering capabilities that the aTyr team has developed around creating highly specific, fully humanized, monoclonal antibodies targeting NRP2 and the different domains of the receptor,” said Leslie Nangle, Ph.D., Vice President, Research at aTyr. “NRP2 interacts with several different protein ligands individually through these distinct domains to mediate signaling through diverse biological pathways associated with different disease states, and we have created a panel of antibodies targeting these distinct domains. While our lead anti-NRP2 antibody, ATYR2810, blocks the interaction with the VEGF ligand and is in preclinical development for cancer, aNRP2-14 targets the interaction between NRP2 and Sema3F/Plexin, a distinct signaling pathway modulated by this receptor. The data presented in this poster suggest that the blocking ability of aNRP2-14 could have potential utility as a therapeutic modality for targeting immune-mediated diseases where Sema3F/VEGF signaling is implicated and presents an additional pipeline opportunity for aTyr to explore.”

About NRP2

Neuropilin-2 (NRP2) is a cell surface receptor that plays a key role in lymphatic development and in regulating inflammatory responses. In many forms of cancer, high NRP2 expression is associated with worse outcomes. NRP2 can interact with multiple ligands and co-receptors through distinct domains to influence their functional roles, making it a potential drug target with multiple distinct therapeutic applications. NRP2 interacts with type 3 semaphorins and plexins to impact inflammation and with forms of vascular endothelial growth factor (VEGF) and their receptors, to impact lymphangiogenesis. In addition, NRP2 modulates interactions between CCL21 and CCR7 potentially impacting homing of dendritic cells to lymphoid organs. aTyr is currently investigating NRP2 receptor biology, both internally and in collaboration with key academic thought leaders, as a novel target for new product candidates for a variety of diseases, including cancer and inflammation.

About aTyr

aTyr is a biotherapeutics company engaged in the discovery and development of innovative medicines based on novel biological pathways. 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 ATYR1923, a clinical-stage product candidate which binds to the Neuropilin-2 receptor and is designed to down-regulate immune engagement in inflammatory lung 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 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 the potential therapeutic benefits and applications of NRP2 antibodies, including ATYR2810 and aNRP2-14; 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 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.

Contact:
Ashlee Dunston
Director, Investor Relations and Corporate Communications
adunston@atyrpharma.com

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