aTyr Pharma Presents Preclinical Research Demonstrating Treatment with ATYR2810 Inhibits Tumor Growth and Therapy Resistance in Highly Aggressive Cancers at the 2023 AACR Annual Meeting

April 17, 2023

Findings demonstrate effects of ATYR2810 in models of certain forms of lung and kidney cancers

SAN DIEGO, April 17, 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 a poster presentation at the 2023 American Association for Cancer Research (AACR) Annual Meeting, which is being held April 14 – 19, 2023, in Orlando, FL. The abstract is available on the AACR website. The poster will be available on the aTyr website once presented.

The poster presents preclinical findings characterizing the inhibition of tumor growth and therapy resistance in aggressive cancers overexpressing VEGF-C treated with ATYR2810, a fully humanized monoclonal antibody that selectively and functionally blocks neuropilin-2 (NRP2) and VEGF-C signaling by directly binding at the site of the VEGF binding pocket. Treatment with ATYR2810 monotherapy and in combination with chemotherapy in a model of non-small cell lung cancer demonstrated increased tumor growth inhibition and sensitivity to chemotherapy. In a model of clear cell renal cell carcinoma, ATYR2810 in combination with the VEGFR-targeted therapy sunitinib inhibited tumor growth and led to tumor regression in some cases. These data demonstrate the potential therapeutic effects of blocking the NRP2/VEGF-C signaling axis with ATYR2810 on enhanced tumor growth inhibition and sensitivity to chemotherapy and targeted therapy.

“High levels of VEGF-C are known to be associated with key features of aggressive cancers, including therapy resistance, whether this resistance is intrinsic or acquired throughout the treatment paradigm,” said Leslie A. Nangle, Ph.D., Vice President, Research, at aTyr. “While current targeted agents can block VEGF/VEGFR signaling, they do not act on VEGF/NRP2 signaling that can occur in the absence of VEGFR and is known to be a key driver of aggressive cancer. By directly blocking the interaction between VEGF and NRP2, ATYR2810 may be an effective novel therapeutic that combats resistance and reduces invasion and metastasis and may serve as a differentiated approach to targeting aggressive cancers.”

Details of the poster and corresponding abstract are as follows:

Title: Resistance to cancer therapy via upregulation of the NRP2/VEGF-C axis can be neutralized by ATYR2810
Authors: Alison Barber, Zhiwen Xu, Lisa Eide, Clara Polizzi, Max Pastenes, Lauren Guy, Jasmine Stamps, Kristina Hamel, Zachary Fogassy, Sofia Klopp-Savino, Esther Chong, Yang Qing, Lara Glendening, Christoph Burkart, Leslie Nangle. aTyr Pharma.
Abstract Presentation Number: 1758
Session Title: Reversal of Drug Resistance
Session Date and Time: Monday, April 17, 2023 from 9:00AM – 12:30PM ET
Location: Orange County Convention Center, W Halls B – E1, Poster Section 21
Poster Board Number: 23

About ATYR2810

ATYR2810 is a fully humanized monoclonal antibody that is designed to specifically and functionally block the interaction between neuropilin-2 (NRP2) and one of its primary ligands, VEGF. NRP2 is a cell surface receptor that is highly expressed in certain tumors, in the lymphatic system and on key immune cells implicated in cancer progression. Increased NRP2 expression is associated with worse outcomes in many cancers. VEGF is a validated mediator of tumor survival and growth and correlates with tumor invasiveness and metastasis. Current therapies that directly target classic VEGF/VEGFR signaling do not block NRP2/VEGFR signaling. ATYR2810 is in preclinical development for the treatment of aggressive cancers where NRP2 is implicated.

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 “potential” and variations of such word 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; timelines and plans with respect to certain development activities; and certain development goals. 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 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 geopolitical and macroeconomic conditions, including 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 Securities and Exchange Commission (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.

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

Source: aTyr Pharma, Inc.