# aTyr Pharma Presents Research Demonstrating Effects of Novel NRP2-Targeting Antibody, ATYR2810, on Tumor Associated Macrophages at the Society for Immunotherapy of Cancer Annual Meeting

November 9, 2021

*Findings provide key insights into ATYR2810's potential mechanism of action, including ability to modulate key immune cells involved in tumor progression, metastasis and therapy resistance.*

*Data will support the clinical development of ATYR2810, including a Phase 1 study in cancer next year.*

SAN DIEGO, Nov. 09, 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 a poster presentation at the Society for Immunotherapy of Cancer (SITC) Annual Meeting, which is being held November 10 – 14, 2021 in Washington, DC, and virtually. The full text of the corresponding abstract is available on the SITC website. The poster will be available for browsing on the SITC website starting Friday, November 12 at 7:00 a.m. ET through Sunday, November 14 at 5:00 p.m. ET.

The poster presents preclinical findings for ATYR2810, providing key insights into its mechanism of action that will help support the clinical development of ATYR2810, including a Phase 1 study in cancer next year. ATYR2810, an anti-Neuropilin-2 (NRP2) monoclonal antibody that blocks NRP2's VEGF-induced signaling axis, was developed from aTyr's research platform focused on targeting human disease pathways associated with extracellular tRNA synthetases. This work details the effects of ATYR2810 on tumor associated macrophages (TAMs) differentiated from human triple-negative breast cancer tumor cells. Treatment with ATYR2810 was shown to decrease the suppressive capabilities of TAMs against T cells compared to untreated TAMs. Furthermore, TAMs treated with ATYR2810 showed a decrease in ZEB1 gene expression, which is a master transcription factor regulating epithelial-mesenchymal transition (EMT), a process that is of great importance in regulating tumor growth, progression and metastatic cascade as well as being implicated in tumor evasion of the immune system. These results suggest that ATYR2810 may be able to treat cancer by targeting tumor immune avoidance mechanisms as well as regulating EMT.

Details of the poster and corresponding abstract are as follows:

**Title:** ATYR2810, an anti-NRP2 monoclonal antibody, targets tumor associated macrophages
**Authors:** Samantha Tyler, Michaela Ferrer, Erik Escobedo, Kaitlyn Rauch, Sofia Klopp-Savino, Justin Rahman, Zhiwen Xu, Esther Chong, Suzanne Paz, Leslie Nangle. aTyr Pharma, San Diego, CA.
**Abstract Number:** 699
**Date and Time:** November 12 – 14, 2021 from 7:00AM – 5:00PM ET

"We are pleased to demonstrate, for the first time, modulation of key cells associated with suppressing T cell-mediated anti-tumor responses in the tumor microenvironment as a result of treatment with ATYR2810, aTyr's IND candidate in preclinical development for aggressive solid tumors where NRP2 is implicated," said Leslie Nangle, Ph.D., Vice President, Research at aTyr. "It is well known that TAMs suppress T cell activity and play an important role in the induction of EMT, contributing to therapy resistance and metastasis. As we and others have shown, these highly suppressive TAMs express high levels of NRP2. The ability of ATYR2810 to regulate EMT-related genes like ZEB1 in human TAMs and reduce their suppressive nature provides insight into the role of NRP2/VEGF signaling in TAMs. These findings advance our understanding of ATYR2810's mechanism of action and the process by which it may inhibit tumor progression and disrupt immune evasion."

**About ATYR2810**

aTyr is developing ATYR2810 as a potential therapeutic for certain aggressive tumors where Neuropilin-2 (NRP2) is implicated. ATYR2810 is a fully humanized monoclonal antibody that is designed to specifically and functionally block the interaction between NRP2 and one of its primary ligands, VEGF. ATYR2810 is the first Investigational New Drug (IND) candidate to arise from aTyr's in-house research program designing monoclonal antibodies to selectively target the NRP2 receptor and its associated signaling pathways. 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. Preclinical data suggest that ATYR2810 could be effective against certain types of solid tumors. ATYR2810 is currently undergoing IND-enabling studies.

**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; 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.

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