aTyr Pharma and its Hong Kong Subsidiary, Pangu BioPharma, Achieve Milestones for First Year of Government Grant to Develop Bispecific Antibody Platform

Two-year grant awarded by the Hong Kong Government's Innovation and Technology Commission is funding the development of new bispecific antibodies targeting NRP2.

SAN DIEGO – May 12, 2021 – aTyr Pharma, Inc. (Nasdaq: LIFE), a biotherapeutics company engaged in the discovery and development of innovative medicines based on novel biological pathways, today announced that the company's Hong Kong subsidiary, Pangu BioPharma Limited (Pangu), together with the Hong Kong University of Science and Technology (HKUST), have achieved the milestones set forth for the first year of a $750,000 grant received from the Hong Kong Government's Innovation and Technology Commission (ITC). The two-year project, which is in part funded by the ITC's Partnership Research Program (PRP), is intended to develop a high-throughput platform for the development of bispecific antibodies with an initial focus on diseases in which Neuropilin-2 (NRP2) overexpression is strongly implicated, including cancer.

Key milestones achieved for the first year of the project included building out a highly skilled research team to establish an innovative antibody discovery platform at HKUST. An integral part of this project was the development and implementation of a novel single-cell antibody discovery approach which has so far yielded numerous candidate high-affinity NRP2/co-receptor antibodies that are currently being screened in functional assays. The second year of the project aims to identify the most productive pairings, optimize mid-scale production/purification and prioritize lead candidate bispecific antibodies based on activity in therapeutically relevant cell-based assays.

"We are very pleased with the progress of Pangu and HKUST in the first year of this important project," said Sanjay S. Shukla, M.D., M.S., President and Chief Executive Officer of aTyr. "We continue to learn more about NRP2 as a target for diseases, including immunology and cancer. Based on its role in regulating inflammatory responses and interaction with various co-receptors, we believe there are several potential options to therapeutically target NRP2 and that bispecific antibodies present a unique approach to create highly-specific agonists of this system which may be therapeutically relevant in certain disease states. We look forward to the outcome from the second year of the project."

Mingjie Zhang, Ph.D., Adjunct Professor of the Division of Life Science at HKUST and project coordinator of the Pangu collaboration, commented, "We are excited to have implemented this new antibody discovery platform as part of the collaboration between Pangu and HKUST. We look forward to utilizing the additional capabilities related to bispecific antibody development that this platform supports to enable us to achieve our goals in the second year of the project."

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.

About the Hong Kong University of Science and Technology

The Hong Kong University of Science and Technology (HKUST) (www.ust.hk) is a world-class research university that focuses on science, technology and business as well as humanities and social science. HKUST offers an international campus, and a holistic and interdisciplinary pedagogy to nurture well-rounded graduates with global vision, a strong entrepreneurial spirit and innovative thinking. HKUST attained the highest proportion of internationally excellent research work in the Research Assessment Exercise 2014 of Hong Kong's University Grants Committee, and is ranked as the world's best young university in Times Higher Education's Young University Rankings 2018. Its graduates were ranked 26th worldwide and among the best from universities from Asia in Global Employability University Survey 2020.

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 our product candidates and research programs; our ability to successfully advance our product candidates, undertake certain development activities (such as developing a high-throughput platform for the development of bispecific antibodies) and accomplish certain development goals, and the timing of such events; the potential benefits of our research project with HKUST; and the anticipated funding of our research project with HKUST. 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 research and development activities for any of our existing or future programs for a variety of reasons, the fact that our research project with HKUST is subject to implementation of the ITC grant, the possibility of unexpected expenses or other demands on our cash resources, 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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