



aTyr Pharma Announces Research Collaboration with Dualsystems Biotech AG to Identify 10 New Therapeutic Targets

Collaboration aims to accelerate drug discovery and advance company's tRNA synthetase platform

SAN DIEGO – October 11, 2022 – aTyr Pharma, Inc. (Nasdaq: LIFE) (aTyr or “the Company”), a biotherapeutics company engaged in the discovery and development of first-in-class medicines from its proprietary tRNA synthetase platform, today announced that it has entered into a research collaboration with Dualsystems Biotech AG, a company specializing in custom proteomics, aimed at accelerating drug discovery and generating new therapeutics based on aTyr’s extensive intellectual property (IP) portfolio. Under the collaboration, which is exclusive with respect to tRNA related molecules, Dualsystems will utilize their proprietary receptor screening technology and research expertise to attempt to identify and validate 10 new target receptors for tRNA synthetases by 2025.

“We are delighted to build upon the impactful discovery work that we have accomplished with Dualsystems thus far,” said Sanjay S. Shukla, M.D., M.S., President and Chief Executive Officer of aTyr. “We were impressed with the work that this highly specialized company conducted to identify fibroblast growth factor receptor 4 (FGFR4) as the target receptor for a fragment of alanyl-tRNA synthetase (AARS), and we are eager for them to showcase their cutting-edge technology further by applying it to additional tRNA synthetases from our IP. We look forward to discoveries from this collaboration as a way to potentially accelerate drug discovery efforts and identify new drugs from our platform.”

aTyr has built an IP estate of over 200 issued patents to date with a goal to create a strategic boundary around the company’s foundational science and library of extracellular tRNA synthetase protein fragments. This library encompasses fragments from all 20 human tRNA synthetases and emphasizes those that are most likely to be therapeutically viable based on understood connections to human disease. aTyr’s approach is to elucidate the unique signaling pathways modulated by these tRNA synthetase fragments and create new biologic therapies based on that understanding. Identifying specific receptor targets for the different tRNA synthetase fragments is a key step in this process.

“We are very pleased to work in collaboration with aTyr to maximize the capabilities of our innovative proprietary screening technology and internal expertise to help potentially generate new therapeutic opportunities from their unique discovery platform,” said Paul Helbing, Ph.D., Chief Executive Officer of Dualsystems Biotech.

The company recently announced the target receptor for a fragment derived from the tRNA synthetase AARS as FGFR4, which was identified using Dualsystems’ screening technology. aTyr intends to interrogate the interaction between this fragment of AARS and FGFR4 to determine potential therapeutic indications.

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 efzofitmod, 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.

About Dualsystems Biotech AG

Dualsystems Biotech is a privately held biotechnology company established in 2006 as a spin-off from the University Zurich, Switzerland. Dualsystems has positioned itself as a leading provider of screening services to the international research community in the pharmaceutical, biotech, agrochemical and cosmetic industries as well as academia.

Dualsystems Biotech's unique and comprehensive screening platforms enable the identification of small molecule-protein and protein-protein interactions in any cellular setting. Dualsystems Biotech's drug and target profiling technologies have significant advantages in cost, speed and sensitivity compare to similar screening technologies for small molecules currently available. They are a powerful tool to accelerate drug target discovery and elucidation of mechanism of action and off-target effect identification in key therapeutic areas.

For more information about Dualsystems Biotech please visit www.dualsystems.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 receptor targets, the potential therapeutic benefits and applications of our current and future product candidates; and the ability of the collaboration to accelerate drug discovery and generate new therapeutics based on aTyr's IP portfolio. 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 Quarterly Report on Form 10-Q for the quarter ended June 30, 2022 filed with the SEC on August 15, 2022 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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