Avidity Advances RNA Programs and Expands into New Therapeutic Areas Utilizing its AOC™ Platform

Avidity adds new research and development programs in skeletal muscle and cardiology

Avidity executing on three distinct rare disease programs in Phase 1/2 clinical development - myotonic dystrophy type 1 (DM1), facioscapulohumeral muscular dystrophy (FSHD), and Duchenne muscular dystrophy (DMD)

SAN DIEGO, Feb. 27, 2023 /PRNewswire/ -- Avidity Biosciences, Inc. (Nasdaq: RNA), a biopharmaceutical company committed to delivering a new class of RNA therapeutics called Antibody Oligonucleotide Conjugates (AOCs™), today announced the advancement and expansion of its internal discovery pipeline with the addition of new research and development candidates to treat conditions in skeletal muscle and cardiology. The preclinical programs have been engineered using Avidity's proprietary AOC platform technology, which is designed to combine the specificity of monoclonal antibodies with the precision of oligonucleotide therapies to target the root cause of diseases previously untreatable with RNA therapeutics.

"With the revolutionary advancement of demonstrating the first-ever successful targeted delivery of RNA into muscle, we are keen to broaden the utility of the AOC platform. We are now pursuing new programs in skeletal muscle and cardiology and believe that there are many more opportunities where AOCs can address debilitating diseases previously unreachable with existing RNA therapies," said Sarah Boyce, president and chief executive officer at Avidity. "We look forward to advancing our own internal research and development programs as well as partnering with collaborators as we work to fulfill our mission to profoundly improve people's lives by delivering a new class of RNA therapeutics."

Avidity continues to advance its three distinct rare disease Phase 1/2 programs in the clinic: AOC 1001 for myotonic dystrophy type 1 (DM1), AOC 1020 for the treatment of facioscapulohumeral muscular dystrophy (FSHD) and AOC 1044 for the treatment of Duchenne muscular dystrophy (DMD) mutations amenable to exon 44 skipping (DMD44). Avidity has decided not to pursue research and development programs in muscle atrophy and Pompe disease at this time.

In addition to its own internal research programs, Avidity continues to explore the full potential of its AOC platform through collaborations and partnerships. Avidity and Eli Lilly and Company ("Lilly") (NYSE: LLY), continue to expand the reach of AOCs through their 2019 global licensing agreement and research collaboration focused on the discovery, development, and commercialization of potential new medicines in immunology and other select indications outside of muscle. Avidity also has a research collaboration with MyoKardia, a wholly-owned subsidiary of Bristol Myers Squibb, to demonstrate the potential utility of AOCs in cardiac tissue.

About Avidity
Avidity Biosciences, Inc.'s mission is to profoundly improve people's lives by delivering a new class of RNA therapeutics - Antibody Oligonucleotide Conjugates (AOCs™). Avidity's proprietary AOCs are designed to combine the specificity of monoclonal antibodies with the precision of oligonucleotide therapies to target the root cause of diseases previously untreatable with RNA therapeutics. Avidity's advancing and expanding pipeline has three programs in clinical development. AOC 1001 is designed to treat people with myotonic dystrophy type 1 (DM1) and is currently in Phase 1/2 development with the ongoing MARINA™ and MARINA-OLE™ trials. AOC 1020 is designed to treat people living with facioscapulohumeral muscular dystrophy (FSHD) and is currently in Phase 1/2 development with the FORTITUDE™ trial. AOC 1044 is designed for people with Duchenne muscular dystrophy (DMD) mutations amenable to exon 44 skipping and is currently in Phase 1/2 development with the EXPLORE44™ trial. AOC 1044 is the first of multiple AOCs the company is developing for DMD. Avidity is also broadening the reach of AOCs beyond muscle tissues through both internal discovery efforts and key partnerships as the company continues to deliver on the RNA revolution. Avidity is headquartered in San Diego, CA. For more information about our science, pipeline and people, please visit www.aviditybiosciences.com and engage with us on LinkedIn and Twitter.

Forward-Looking Statements
Avidity cautions readers that statements contained in this press release regarding matters that are not historical facts are forward-looking statements. These statements are based on the company's current beliefs and expectations. Such forward-looking statements include, but are not limited to, statements regarding: expectations related to the progression of clinical programs for AOC 1001, AOC 1020 and AOC 1044 and the timing thereof; the potential of Avidity's product candidates to treat rare diseases; Avidity's plans to expand its AOC platform into additional muscle diseases; the ability of AOCs to treat diseases beyond muscle tissues; and the continued success of research and development programs with collaboration partners. The inclusion of forward-looking statements should not be regarded as a representation by Avidity that any of these items will be achieved. Actual results may differ from those set forth in this press release due to the risks and uncertainties inherent in Avidity's business, including, without limitation: the FDA may not remove the partial clinical hold and Avidity may not be able to resolve the analysis related to the underlying cause of the related serious adverse event, which may result in delays in the MARINA study or an inability to compete the study; unexpected adverse side effects or inadequate efficacy of its product candidates that may delay or limit their development, regulatory approval and/or commercialization, or may result in recalls, product liability claims or additional clinical holds; Avidity is early in its development efforts; Avidity's approach to the discovery

and development of product candidates based on its AOC platform is unproven, and the company does not know whether it will be able to develop any products of commercial value; potential delays in the commencement, enrollment and completion of preclinical studies or clinical trials; the success of its preclinical studies and clinical trials for the company's product candidates; the results of preclinical studies and early clinical trials are not necessarily predictive of future results; Avidity's dependence on third parties in connection with preclinical and clinical testing and product manufacturing; Avidity could exhaust its available capital resources sooner than it currently expects; and other risks described in Avidity's Quarterly Report on Form 10-Q for the quarter ended September 30, 2022, filed with the Securities and Exchange Commission (SEC) onNovember 8, 2022. Avidity cautions readers not to place undue reliance on these forward-looking statements, which speak only as of the date hereof, and the company undertakes no obligation to update such statements to reflect events that occur or circumstances that arise after the date hereof, except as may be required by law. All forward-looking statements are qualified in their entirety by this cautionary statement, which is made under the safe harbor provisions of the Private Securities Litigation Reform Act of 1995.

Investor Contact:
Kathleen Gallagher
(858) 401-7900 x550
investors@aviditybio.com

Media Contact:
Navjot Rai
(858) 401-7900 x550
media@aviditybio.com

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