Avidity Biosciences Receives FDA Breakthrough Therapy Designation for Delpacibart Zotadirsen (del-zota) for the Treatment of DMD in People with Mutations Amenable to Exon 44 Skipping

-- On track for planned BLA submission for del-zota at year end 2025 --

SAN DIEGO, July 23, 2025 /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 that the U.S. Food and Drug Administration (FDA) has granted Breakthrough Therapy designation to delpacibart zotadirsen (del-zota) for the treatment of Duchenne muscular dystrophy (DMD) in people living with mutations amenable to exon 44 skipping (DMD44).

Del-zota is currently being assessed in the Phase 2 EXPLORE44 Open-Label Extension (EXPLORE44-OLE™) trial for people living with DMD44 and is the first of multiple AOCs the company is developing for DMD.

DMD is a rare genetic condition that is characterized by progressive muscle damage and weakness due to the loss of dystrophin protein that typically starts at a very young age. Del-zota is designed to deliver phosphorodiamidate morpholino oligomers (PMOs) to skeletal muscle and heart tissue to specifically skip exon 44 of the dystrophin gene and enable production of near-full length dystrophin.

"Breakthrough Therapy designation further underscores the FDA's appreciation for the significant potential of del-zota to address the underlying cause of DMD44 and the urgent need to bring innovative treatment options to the DMD community," said Steve Hughes, M.D., chief medical officer at Avidity. "With the remarkable, consistent improvements we've seen in multiple biomarkers including dystrophin in the Phase 1/2 EXPLORE44 trial, we are focused on bringing del-zota to people living with DMD44 as quickly as possible and remain on track for our planned BLA submission at year end 2025."

In the completed Phase 1/2 EXPLORE44® trial for people living with DMD44, del-zota demonstrated statistically significant increases in exon skipping, a substantial increase in dystrophin production, a significant and sustained reduction in creatine kinase levels to near normal and consistent favorable safety and tolerability. Avidity plans to present topline and functional data from the ongoing, fully enrolled Phase 2 EXPLORE44-OLE trial in the fourth quarter of 2025.

The company remains on track for a planned BLA submission at year end 2025. Avidity's commercial preparations for a potential U.S. launch of del-zota in DMD44 following FDA approval are underway. Del-zota's anticipated launch sets the foundation for potential sequential launches of Avidity's additional neuromuscular programs for del-desiran in myotonic dystrophy type 1 (DM1) and del-brax in facioscapulohumeral muscular dystrophy (FSHD).

Breakthrough Therapy designation is a process designed to expedite the development and review of drugs that are intended to treat a serious condition and preliminary clinical evidence indicates that the drug may demonstrate substantial improvement over available therapy on a clinically significant endpoint(s).

In addition to receiving Breakthrough Therapy designation, del-zota has previously been granted Orphan designation by the FDA and the European Medicines Agency (EMA) and Rare Pediatric Disease and Fast Track designations by the FDA for the treatment of DMD44.

About the EXPLORE44® Phase 1/2 Trial
The EXPLORE44® trial was a randomized, placebo-controlled, double-blind, Phase 1/2 clinical trial that enrolled 26 participants with Duchenne muscular dystrophy mutations amenable to exon 44 skipping (DMD44). The study was designed to evaluate the safety, tolerability, pharmacokinetics, and pharmacodynamic effects of single and multiple ascending doses of del-zota (formerly AOC 1044) administered intravenously in healthy volunteers and participants living with DMD44 The EXPLORE44 trial assessed exon skipping and dystrophin protein levels in participants with DMD44. Participants with DMD44 had the option to enroll into EXPLORE44-OLE™, an open-label extension study, at the end of the post-treatment period. For more information about the EXPLORE44 trial, visit the EXPLORE44 study website or visit https://www.clinicaltrials.gov and search for NCT05670730.

About the Phase 2 EXPLORE44-OLE™ Study
EXPLORE44-OLE™ is an open-label, multi-center trial designed to evaluate the long-term safety, tolerability, pharmacokinetics, pharmacodynamic effects and efficacy of del-zota in participants with DMD44. Enrollment has been completed in the EXPLORE44-OLE study, with 23 participants who were previously enrolled in the Phase 1/2 EXPLORE44® trial and 16 participants who directly enrolled in the EXPLORE44-OLE study. Participants in the EXPLORE44-OLE study will receive 5 mg/kg of del-zota every six weeks. The total duration of active treatment with del-zota in the EXPLORE44-OLE study is approximately 24 months. Once participants have completed active treatment, there will be a three-month safety follow-up period. Avidity may extend active treatment beyond 24 months at a future timepoint. For more information on this study click

here or visit http://www.clinicaltrials.gov and search for NCT06244082.

About Duchenne muscular dystrophy (DMD)
Duchenne muscular dystrophy (DMD) causes a lack of functional dystrophin that leads to stress and tears of muscle cell membranes, resulting in muscle cell death and the progressive loss of muscle function. The dystrophin protein maintains the integrity of muscle fibers and acts as a shock absorber through its role as the foundation of a group of proteins that connects the inner and outer elements of muscle cells. People living with DMD suffer from progressive muscle weakness that typically starts at a very young age. Over time, people with Duchenne will develop problems walking and breathing, and eventually, the heart and respiratory muscles will stop working. Those living with the condition often require special aid and assistance throughout their lives and have significantly shortened life expectancy. While there are treatments approved to treat people with DMD, there remains a very high unmet need. DMD is a monogenic, X-linked, recessive disease that primarily affects males, with one in 3,500 to 5,000 boys born worldwide having Duchenne.

About del-zota
Del-zota is designed to deliver phosphorodiamidate morpholino oligomers (PMOs) to skeletal muscle and heart tissue to specifically skip exon 44 of the dystrophin gene to enable dystrophin production in people living with Duchenne muscular dystrophy with mutations amenable to exon 44 skipping (DMD44). DMD is characterized by progressive muscle degeneration and weakness due to alterations of a protein called dystrophin that protects muscle cells from injury during contraction. Del-zota consists of a proprietary monoclonal antibody that binds to the transferrin receptor 1 (TfR1) conjugated with a PMO targeting exon 44. The Phase 1/2 EXPLORE44® trial of del-zota has been completed, and the EXPLORE44 Open-Label Extension trial (EXPLORE44-OLE™) of del-zota is currently ongoing. Topline data from the completed del-zota Phase 1/2 EXPLORE44 trial demonstrated unsurpassed delivery of PMOs to skeletal muscle, robust increases in dystrophin production, significant increases in exon 44 skipping, and significant and sustained decreases of creatine kinase levels to near normal in people living with DMD44. Del-zota has received Rare Pediatric Disease, Orphan Drug, Fast Track and Breakthrough Therapy designations by the U.S. Food and Drug Administration (FDA) and Orphan designation by the European Medicines Agency (EMA).

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 is revolutionizing the field of RNA with its proprietary AOCs, which are designed to combine the specificity of monoclonal antibodies with the precision of oligonucleotide therapies to address targets and diseases previously unreachable with existing RNA therapies. Utilizing its proprietary AOC platform, Avidity demonstrated the first-ever successful targeted delivery of RNA into muscle and is leading the field with clinical development programs for three rare neuromusculardiseases: myotonic dystrophy type 1 (DM1), Duchenne muscular dystrophy (DMD) and facioscapulohumeral muscular dystrophy (FSHD). Avidity is also advancing two wholly-owned precision cardiology development candidates addressing rare genetic cardiomyopathies. In addition, Avidity is broadening the reach of AOCs with its advancing and expanding pipeline including programs in cardiology and immunology through key partnerships. Avidity is headquartered in San Diego, CA. For more information about our AOC platform, clinical development pipeline and people, please visit www.aviditybiosciences.com and engage with us on LinkedIn and X.

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: Avidity's plans to submit a BLA for del-zota and the timing thereof; Avidity's plans for potentially three sequential launches and the timing thereof; Avidity's plans to present topline and functional data from the ongoing EXPLORE44-OLE™ study and the timing thereof; the characterization of data associated with del-zota and the impact of such data on the advancement of del-zota; Avidity's plans for DMD candidates beyond del-zota for DMD44; the design, goals and status of the EXPLORE44-OLE study; Avidity's plans and expectations to advance its clinical programs, and the timing thereof; and Avidity's platform, planned operations and programs. The inclusion of forward-looking statements should not be regarded as a representation by Avidity that any of these plans 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 and beyond its control, including, without limitation: preliminary results of a clinical trial are not necessarily indicative of final results; further analysis of existing clinical data and analysis of new data may lead to conclusions different from those established as of the data cutoff dates in the clinical trial of del-zota, and such data may not meet Avidity's or regulators' expectations; unexpected adverse side effects to, or inadequate efficacy of, del-zota that may delay or limit its development, regulatory approval and/or commercialization; later developments with the FDA and other global regulators that could be inconsistent with the feedback received to date regarding del-zota and which could delay its currently anticipated timelines; Avidity's approach to the discovery and development of product candidates based on its AOC™ platform is unproven; potential delays in the commencement, enrollment, data readouts and completion of the EXPLORE44-OLE study; Avidity's dependence on third parties in connection with clinical testing and product manufacturing; legislative, judicial and regulatory developments in the United States and foreign countries; Avidity could exhaust its available capital resources sooner than it currently expects; and other risks described in Avidity's Annual Report on Form 10-K for the fiscal year ended December 31, 2024 and subsequent filings with the SEC. 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. 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.

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