AVI BioPharma Announces Treatment of First Patient in Systemic Clinical Trial of AVI-4658 for Treatment of Duchenne Muscular Dystrophy

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For Immediate Release

PORTLAND, OR — February 19, 2009 — AVI BioPharma, Inc. (NASDAQ: AVII), a developer of RNA-based drugs, today announced treatment of the first patient in a clinical trial evaluating the systemic delivery of AVI-4658 for the treatment of Duchenne muscular dystrophy (DMD).

“We are very pleased to begin the systemic evaluation of our exon skipping drug — AVI-4658 — for the treatment of DMD,” said Stephen Shrewsbury, M.D., Chief Medical Officer and Senior Vice President, Clinical and Regulatory Affairs of AVI BioPharma. “We believe that this trial will build significantly on the data generated by the successful recent trial evaluating intramuscular administration of the same drug in DMD boys.”

The trial will enroll 16 ambulatory boys with DMD and initially evaluate multiple intravenous doses of AVI-4658 between 0.5 – 4.0 mg/kg. This is an open label, 12 week safety trial, which includes measures of drug efficacy and pharmacokinetics. The clinical study started in London UK at the UCL Institute of Child Health / Great Ormond Street Hospital NHS Trust facilities by members of the MDEX Consortium led by Professor Francesco Muntoni and will shortly start to recruit patients in Newcastle Upon Tyne. AVI BioPharma is the sponsor for the trial and Professor Muntoni has been awarded funding support of $1.3 million from the UK Medical Research Council to offset some of the clinical costs of the trial.

In January 2009, AVI announced results from a Phase 1 trial evaluating the intramuscular administration of AVI-4658 for the treatment of DMD, also performed in collaboration with the MDEX Consortium. Biopsy data showed that injection of the drug into the muscles of a series of DMD patients successfully induced dystrophin production in a dose responsive manner. Further, the drug was well tolerated, with no significant drug–related adverse events. The Company was granted an orphan drug designation for AVI-4658 by the U.S. Food and Drug Administration in November 2007 and by the European Medicines Agency in December 2008.

DMD is an incurable muscle-wasting disease associated with errors in the gene that codes for dystrophin, a protein that plays a key structural role in muscle fiber function. AVI-4658 is designed to skip exon 51 of the dystrophin gene, allowing for restoration of the reading frame in the mRNA sequence. Based on its pre-clinical research and the Phase 1 trial results, AVI believes that, by skipping this exon, a truncated but functional form of the dystrophin protein is produced to ameliorate the disease process, potentially prolonging and improving the quality of life in these patients.

About Duchenne Muscular Dystrophy (DMD)

DMD is one of the most common fatal genetic disorders to affect children around the world. Approximately one in every 3,500 boys worldwide is afflicted with Duchenne muscular dystrophy with 20,000 new cases reported each year. It is a devastating and incurable muscle-wasting disease associated with specific inborn errors in the gene that codes for dystrophin, a protein that plays a key structural role in muscle fiber function. Symptoms usually appear in male children before age 6. Progressive muscle weakness of the legs and pelvis eventually spreads to the arms, neck, and other areas. By age 10, braces may be required for walking, and most patients are confined to a wheelchair by age 12. Eventually, the disease progresses to a complete paralysis and increasing difficulty in breathing. The condition is terminal and death usually occurs before the age of 30. The outpatient cost of care for a non-ambulatory DMD boy is among the highest of any disease. There is currently no cure for DMD, but for the first time in decades, there are promising therapies in or moving into development.

About AVI BioPharma

AVI BioPharma is focused on the discovery and development of RNA–based drugs utilizing proprietary derivatives of its antisense chemistry (morpholino-modified phosphorodiamidate oligomers or PMOs) that can be applied to a wide range of diseases and genetic disorders through several distinct mechanisms of action. Unlike other RNA therapeutic approaches, AVI’s antisense technology has been used to directly target both messenger RNA (mRNA) and its precursor (pre-mRNA), allowing for both up- and down-regulation of targeted genes and proteins. AVI’s RNA–based drug programs are being evaluated for the

treatment of Duchenne muscular dystrophy as well as for the treatment of cardiovascular restenosis through our partner Global Therapeutics, a Cook Group Company. AVI's antiviral programs have demonstrated promising outcomes in Ebola and Marburg virus infections (both of which have product candidates heading into clinical programs under US INDs) and may prove applicable to other viral targets such as HCV or Dengue viruses. For more information, visit www.avibio.com.

About the MDEX Consortium

The MDEX consortium led by Professor Muntoni, is a multidisciplinary enterprise to promote translational research into muscular dystrophies, and is formed by the clinical groups of Professor Francesco Muntoni (UCL Institute of Child Health) and Professor Kate Bushby and Professor Volker Straub (Newcastle University), and scientists from Imperial College London (Professor Dominic Wells), UCL Institute of Child Health (Dr Jennifer Morgan), Royal Holloway University of London (Professor George Dickson and Dr Ian Graham), Oxford University (Dr Matthew Wood) and University of Western Australia (Prof Steve Wilton). In addition, the charities Muscular Dystrophy Campaign (MDC), Action Duchenne and Duchenne Family Support Group also participate in the Consortium. For more information visit www.mdex.org.uk.