AVI BioPharma and Ercole Biotech Announce License and Drug Development Agreement for Duchenne Muscular Dystrophy and Beta Thalassemia

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PORTLAND, Ore. & RESEARCH TRIANGLE PARK, N.C.--(BUSINESS WIRE)--May 2, 2007--AVI BioPharma, Inc. (Nasdaq:AVII), and Ercole Biotech, Inc., today announced a cross-licensing and collaboration agreement to develop drugs that may prove effective in treating the genetic diseases Duchenne muscular dystrophy (DMD) and beta thalassemia.

Under the terms of the agreement, AVI and Ercole will collaborate in the development of products for DMD and beta thalassemia, with AVI leading the DMD program and Ercole leading the thalassemia program. Further, each company has the option of co-funding the program led by the other party and sharing equally in the financial returns from resulting products. In connection with the agreement, AVI will issue Ercole shares of AVI common stock and Ercole will issue AVI shares of Ercole Series A-2 Preferred Stock.

"The potential treatments of Duchenne muscular dystrophy and beta thalassemia are important and compelling applications of the technologies that Ercole and AVI have pioneered," said K. Michael Forrest, chief executive officer of AVI. "We are pleased to be expanding our relationship with Ercole and are proud to be jointly developing potential drugs for these diseases, where effective therapies are so badly needed."

The technologies developed by Ercole and AVI allow manipulation of the RNA splicing process and the production by cells of clinically desirable variants of relevant proteins. AVI refers to its therapeutic approach as ESPRIT (Exon Skipping Pre-RNA Interference Technology). Ercole uses the term Splice Switching Oligonucleotide (SSO) in referring to its drug discovery platform to redirect mRNA splicing. AVI believes that its morpholino chemistry is particularly useful in modifying splicing of mRNA because oligonucleotides based on this chemistry do not degrade target RNA and do not lead to down-regulation of the target gene.

"The feasibility of correcting splicing to treat Duchenne muscular dystrophy and beta thalassemia has been well demonstrated in animal models by AVI, Ercole and our academic collaborators," said Ryszard Kole, Ph.D., president and chief scientific officer of Ercole. "It is advantageous that Ercole's splice switching technology and AVI's morpholino chemistry are so well suited for this purpose. Bringing the technology, expertise and intellectual property of both companies to bear on these programs will greatly enhance our ability to develop potential drugs for these diseases."

This is the second agreement between AVI and Ercole. In December 2006 the companies executed a cross-license and collaboration agreement covering a number of undisclosed therapeutic targets.

About Duchenne Muscular Dystrophy and Beta Thalassemia

Duchenne muscular dystrophy is an ultimately fatal disorder that is characterized by rapidly progressive muscle weakness and atrophy of muscle tissue starting in the legs and pelvis and later affecting the whole body. DMD is the most common form of muscular dystrophy, affecting one in 3,500 young males. An estimated 17,000 boys and young men are afflicted with DMD in the U.S. alone. Women can be carriers of DMD but usually exhibit no symptoms. DMD is caused by mutations in the dystrophin gene, which encodes a protein that is essential to the structure and function of muscle cells. There is no treatment known to be effective for DMD.

Beta thalassemia is one of the most common genetic diseases worldwide. It is caused by a genetic defect in the human beta hemoglobin gene. Beta thalassemia occurs in only about one in 40,000 births in the United States, but in approximately one in 800 births in Asia. Because of the cost of treatment, thalassemia causes a significant drain on healthcare resources in some Asian countries. If left untreated, patients with severe thalassemia suffer pronounced anemia, bone deformities, debilitating enlargement of the spleen and liver, and ultimately die in their teens or early twenties. Current treatment approaches for patients with severe thalassemia are limited to blood transfusions, iron chelation therapy and bone marrow transplants.

About ESPRIT Technology

In normal genetic function, gene transcription produces a full-length pre-RNA that is then processed to a much shorter and functional messenger RNA (mRNA). The mRNA is the template for creating a protein. During pre-RNA processing, packets of useful genetic information, called exons, are snipped out of the full-length RNA and spliced together to make the functional mRNA template. AVI's proprietary third-generation NEUGENE(R) chemistry can be used to target splice-joining sites in the pre-RNA, thus forcing the cell machinery to skip over targeted exons, providing altered mRNA, which in turn produces altered proteins. When the skipped exon contains a disease-causing mutation, AVI believes that the altered protein may restore function and potentially overcome the devastating clinical consequences of the mutation.

About SSO Technology

Splice Switching Oligonucleotide drugs bind to a targeted splicing element in pre-mRNA and thereby redirect the selective removal or retention of designated exons in the alternatively spliced messenger RNA. As a result, a desired protein is translated from the mRNA and the production of the undesirable one is prevented. Ercole's patented SSO technology is based on pioneering discoveries and inventions related to oligonucleotide-induced modulation of alternative splicing and RNA repair originated from the laboratory of professor Ryszard Kole at the University of North Carolina at Chapel Hill School of Medicine.

About Ercole Biotech

Ercole Biotech creates and develops oligonucleotide-based RNA therapeutics that direct alternative splicing of messenger RNA, an essential cellular mechanism responsible for control of gene expression. Approximately 70 percent of all human genes are alternatively spliced, and those genes produce multiple different proteins from a single gene. Splice Switching Oligonucleotide drugs have the potential to become a major new class of

pharmaceuticals, capable of inducing production of therapeutic proteins by the patient's own body, as well as simultaneously silencing the expression of undesired proteins. See http://www.ercolebiotech.com for more information about the company and its drug discovery platform.

About AVI BioPharma

AVI BioPharma develops therapeutic products for the treatment of life-threatening diseases using third-generation NEUGENE antisense drugs and ESPRIT exon skipping technology. AVI's lead NEUGENE antisense compound is designed to target cell proliferation disorders, including cardiovascular restenosis. In addition to targeting specific genes in the body, AVI's antiviral program uses NEUGENE antisense compounds to combat disease by targeting single-stranded RNA viruses, including West Nile virus, hepatitis C virus, dengue virus, Ebola virus and influenza A virus. AVI's NEUGENE-based ESPRIT technology will initially be applied to potential treatments for Duchenne muscular dystrophy. More information about AVI is available on the company's Web site at http://www.avibio.com.

"Safe Harbor" Statement under the Private Securities Litigation Reform Act of 1995: The statements that are not historical facts contained in this release are forward-looking statements that involve risks and uncertainties, including, but not limited to, the results of research and development efforts, the results of preclinical and clinical testing, the effect of regulation by the FDA and other agencies, the impact of competitive products, product development, commercialization and technological difficulties, and other risks detailed in the company's Securities and Exchange Commission filings.

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