



AVI BioPharma and Ercole Biotech Announce Cross-License and Drug Discovery Collaboration for Alternative Splicing Therapeutics

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PORTLAND, Ore. & RESEARCH TRIANGLE PARK, N.C.--(BUSINESS WIRE)--Dec. 20, 2006--AVI BioPharma, Inc. (Nasdaq:AVII), and Ercole Biotech, Inc., announced today a cross-license and collaboration agreement to identify and develop drugs that direct the splicing of messenger RNA (mRNA) to treat a variety of genetic and acquired diseases. Under the terms of the agreement, each party is granting the other rights under their respective patents for RNA splice-altering technologies.

Under the license agreement, AVI and Ercole will each select a set of specific gene targets and take the respective lead in investigating the potential therapeutic effects of shifting splicing of those genes. 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.

The license terms also include an exclusive license to Ercole to AVI's NEUGENE(R) third-generation antisense chemistry for the specific targets selected by Ercole. NEUGENE molecules are also referred to as phosphorodiamidate morpholino oligomers (PMOs).

"Our recent experiments have shown that PMOs are more effective in splice switching and up-regulation of test genes in muscle as well as heart tissues of treated mice than are a number of other chemistries we have tested," said Ryszard Kole, Ph.D., president and chief scientific officer of Ercole. "This agreement gives us access to AVI's proprietary PMO chemistry for gene targets that are of high interest to Ercole and extends the range of oligonucleotide chemistries Ercole can utilize in developing its SSO technology."

"This exciting collaboration strengthens AVI's intellectual property position for ESPRIT technology and provides for scientific cooperation that will benefit both our companies," said Denis R. Burger, Ph.D., chief executive officer of AVI. "Under Dr. Kole's scientific leadership, Ercole is a recognized leader in the alternative splicing field."

Alternative splicing is a mechanism that allows for generation of multiple proteins from a single gene. As scientists discovered while decoding the human genome, human biological complexity derives not from a large number of genes, but from the ability to produce large numbers of functionally distinct proteins from a relatively modest number of genes.

The splicing technologies developed by Ercole and AVI allow manipulation of this process and are designed to produce clinically desirable variants of relevant proteins. AVI's 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.

In connection with the cross-license and collaboration agreement, AVI will issue Ercole shares of AVI common stock, and Ercole will issue AVI shares of Ercole Series A-2 Preferred Stock. Other financial terms of the agreement were not disclosed.

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 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, the altered protein may restore function and potentially overcome the devastating clinical consequences of the mutation.

About AVI BioPharma

AVI BioPharma develops therapeutic products for the treatment of life-threatening diseases using third-generation NEUGENE antisense drugs. AVI's lead NEUGENE antisense compound is designed to target cell proliferation disorders, including cardiovascular restenosis, cancer and polycystic kidney disease. 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 has introduced a NEUGENE-based exon-skipping technology called ESPRIT therapy. More information about AVI is available on the company's Web site at www.avibio.com.

About Ercole Biotech

Ercole Biotech, Inc., a research stage biopharmaceutical company, creates oligonucleotide drugs that achieve their therapeutic effect by directing the alternative splicing of target genes. These novel 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 (mRNA). As a result, a desired protein is translated from the mRNA and the production of the undesirable one is prevented. Ercole's SSO technology is based on pioneering discoveries and inventions related to oligonucleotide-induced modulation of alternative splicing and RNA repair. Ercole's patented technology originated from the laboratory of Professor Ryszard Kole, Ph.D., at the University of North Carolina School of Medicine. See www.ercolebiotech.com for more information about the company and its drug discovery platform.

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