AVI BioPharma Publishes Preclinical Data Showing NEUGENE Antisense Inhibition of Multiple Strains of Influenza A Virus

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Business Editors/Biotech Writers

PORTLAND, Ore.--(BUSINESS WIRE)--Oct. 27, 2006--AVI BioPharma, Inc. (Nasdaq:AVII), today announced publication of preclinical results from studies carried out by an international team of researchers showing the ability of NEUGENE(R) antisense to inhibit multiple strains of influenza A virus.

The study, "Inhibition of Multiple Subtypes of Influenza A Virus in Cell Cultures with Morpholino Oligomers," was published in the peer-reviewed journal Antimicrobial Agents and Chemotherapy and is currently available online at http://aac.asm.org.

"This latest publication is further evidence that NEUGENE drugs offer a broad-spectrum therapeutic approach to treating a high percentage of known influenza viral strains," said Patrick L. Iversen, Ph.D., senior vice president of research and development at AVI. "Two of the NEUGENE drugs used in these studies have now moved into preclinical animal studies against both seasonal and avian influenza strains."

For the published study, eight NEUGENE antisense agents were evaluated for their ability to inhibit influenza A virus by blocking the complementary RNA sequences that are highly conserved across viral subtypes. Several of the NEUGENE agents proved to be highly efficacious, each reducing viral titer in a dose-responsive and sequence-specific manner. Two NEUGENE agents in particular were found to be highly effective against multiple strains of the influenza A virus, including H1N1, H3N2, H3N8, H7N7 and the highly pathogenic H5N1 avian influenza virus.

Researchers who contributed to this study include Dr. Jianzhu Chen and Dr. Qin Ge at Massachusetts Institute of Technology; Dr. P. Puthavathana at Mahidol University in Bangkok, Thailand; Dr. Darwyn Kobasa at the Public Health Agency of Canada in Winnipeg, Manitoba; and Dr. Manoj Pastey at Oregon State University in Corvallis, Ore.

AVI's Antiviral Program

AVI's proprietary NEUGENE antisense drug candidates have demonstrated efficacy in preclinical studies against SARS coronavirus, West Nile virus (WNV), hepatitis C virus (HCV), dengue virus, Ebola virus and Marburg virus. AVI has filed IND applications with the U.S. Food and Drug Administration and has ongoing clinical trials in WNV and HCV.

Showing how versatile NEUGENE drugs can be across viral subtypes, AVI demonstrated in its collaboration with the Centers for Disease Control and Prevention that NEUGENE agents are efficacious against all four immunologically distinct subtypes of the dengue virus. This outcome was achieved by targeting a highly conserved region of the dengue viral genetic code. In collaborative work with the U.S. Army Medical Research Institute of Infectious Diseases (USAMRIID) targeting the Ebola virus, NEUGENE drugs protected three animal species from lethal challenges with this virus (see PloS Pathog 2(1): e1). Additional clinical development efforts targeting dengue virus and Ebola virus are planned for 2006.

The speed with which effective NEUGENE drugs can be designed and manufactured exceeds any other modern drug development time frame. For example, NEUGENE compounds targeting SARS, WNV and Ebola were developed within days to weeks of obtaining the appropriate genetic sequences for the viruses.

About Influenza A Viruses

Influenza, or flu, is a contagious respiratory illness caused by influenza viruses. On average 5 percent to 20 percent of the U.S. population is infected with the flu each year. Influenza A virus is an enveloped negative-strand RNA virus, with eight genome segments that code for 10 proteins. Influenza strains are subtyped according to the antigenic and genetic nature of their surface glycoproteins: hemagglutinin (HA or H) and neuraminidase (NA or N). Fifteen H and nine N subtypes have been identified, with three associated with widespread human disease (H1N1, H2N2 and H3N2). In addition, several subtypes of avian influenza virus -- H5N1, H7N7 and H9N2 -- can infect and cause disease in humans.

The current influenza pandemic in birds throughout Asia, Eastern Europe and Turkey is caused by the H5N1 subtype. It is thought that co-infection of humans or certain animals (such as pigs) with both H1N1 and H5N1 can lead to a reassortment or recombination of viral particles, resulting in the emergence of a virus with dangerous public health properties, namely one to which the human population has no natural immunity and which has the ability to spread easily from person to person. It is believed that emergence of avian flu by this general mechanism may have led to the worldwide pandemics of 1918, 1957 and 1968.

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 http://www.avibio.com.

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