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UMASS MEDICAL SCHOOL PARTNERS WITH POWDERMED TO TEST POTENTIAL AVIAN FLU VACCINE

PowderMed also licenses fundamental UMMS technology for DNA vaccines to advance breakthrough treatment for annual flu virus.

WORCESTER, Mass. — The University of Massachusetts Medical School today announced a partnership with British immunotherapeutics company PowderMed to advance the development of a potential vaccine for avian flu. Under the agreement, PowderMed's leading DNA vaccine candidate for avian flu (H5) will be tested and analyzed in the lab of Shan Lu, MD, PhD, professor of medicine and leader of the UMMS DNA vaccine efforts.

Dr. Lu was part of the UMMS team which pioneered fundamental elements of DNA-based flu vaccines in the 1990s. "We are very pleased to be working with PowderMed to help evaluate this vaccine candidate in hopes of speeding its entry into the clinic," Dr. Lu said. "At UMass Medical School we have focused many years of effort on developing DNA-based vaccine technology, because the world desperately needs a better way to target not only flu, but many infectious diseases."

PowderMed is recognized as the international leader in the development of a new class of

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vaccines for flu. Results to date suggest that PowderMed's proprietary prophylactic DNA-based vaccine will provide defense against influenza. PowderMed will initiate phase II studies using both bird flu strains and annual flu strains in 2006. Dr. Lu's lab will analyze the avian flu vaccine's ability to generate a protective immune response in animals. There will be no live avian flu virus involved in the work—only the DNA-vaccine candidate.

"UMass Medical School has a rich history in DNA vaccine research, and PowderMed is pleased to help continue this tradition through this latest collaboration," said PowderMed CEO Dr. Clive Dix. "Through ground-breaking research and technology, we are creating the potential for DNA vaccines to significantly limit the burden of disease. The advantage of a DNA-based approach is that the vaccines can be manufactured very rapidly and in large quantities, while producing an extremely good immune response at low doses."

In addition to the collaboration with Dr. Lu for the avian flu program, PowderMed has licensed certain patent rights related to the DNA-vaccine technology platform developed at UMass in the 1990s. That work, led by former UMMS Professor Harriet Robinson, PhD, in collaboration with colleagues at St. Jude's Children's Research Hospital in Tennessee, is widely viewed as seminal work in the development of DNA-based vaccine technology. Dr. Lu, who was part of the team in Dr. Robinson's lab at the time, has continued to advance the science of DNA-vaccine technology in his own lab at UMMS, developing other potential vaccine candidates for HIV, seasonal flu (H1 and H3) and potential new pandemic flu including avian flu H5 viruses.

"In addition to the quick manufacturing time and ease of storage and administration of DNA-based vaccines, there is growing data that gives us hope that the immunity they generate may be longer lasting," said Dr. Lu. "So for many reason, we believe that DNA-based vaccines are an important next-generation step in combating infectious diseases."

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Traditional flu vaccines use weakened elements of the actual flu virus in their composition and take many months to produce in large scale. Scientists are forced to predict months in advance the likely strain of flu that will circulate each year, then take samples of those viruses and grow them in massive numbers of chicken eggs. The process can't respond rapidly to a different emerging strain of annual flu, or a potential pandemic of a mutated avian strain.

DNA-based vaccines work in a completely different way. They employ snippets of DNA constructed in the lab that match genetic elements of the flu virus. When the DNA-vaccine is administered, it begins to express the protective proteins, which the host recognizes as part of flu, thereby initiating an immune response.

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About UMMS: The University of Massachusetts Medical School, one of the fastest growing academic health centers in the country, has built a reputation as a world-class research institution, consistently producing noteworthy advances in clinical and basic research. The Medical School attracts more than $174 million in research funding annually, 80 percent of which comes from federal funding sources. UMMS is the academic partner of UMass Memorial Health Care, the largest health care provider in Central Massachusetts. For more information visit www.umassmed.edu.

About PowderMed Ltd – http://www.powdermed.com/ PowderMed is a private immunotherapeutic company based in Oxford, UK. The Company is focused on the clinical development and manufacture of therapeutic and prophylactic DNA-based vaccines for viral diseases and cancer. The company has four clinical and three pre-clinical stage projects. The lead clinical program has shown positive Phase I results in the treatment and prevention of human influenza. This technology is uniquely and easily adaptable to treat avian flu and to address the pandemic threat. PowderMed also has a product for the treatment of genital herpes in Phase I trials, and two partnered Phase I programs, one in Cancer (Ludwig Institute) and the other in HIV/AIDS (Glaxo

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SmithKline). PowderMed vaccines are delivered using PMED™ (Particle mediated epidermal delivery), a needle-free, virtually painless delivery system that requires minimal medical training, allows self-administration and requires no refrigeration for stockpiling. Specifically, PowderMed's technology delivers DNA to the epidermal layer of the skin where it is presented to the cells of the immune network, thereby creating immunity and thus facilitating both treatment and prevention of disease. PowderMed has adopted a flexible and cost effective business strategy; company resources are used for discovery research and drug design with outsourced partners being used for its drug development and manufacturing requirements. The Company has a highly experienced management team that has a combined 160 years of experience, with Rolf Stahel as the chair of the board. The Company has raised £20 million in venture financing to date, from its existing investor syndicate that comprises Abingworth Management, Advent Venture Partners, Isis College Fund, Oxford Bioscience Partners and SV Life Sciences.

PowderMed's Influenza Vaccines

PowderMed DNA vaccines are made up of two components – the vaccine-specific DNA and the delivery device. The DNA vaccine consists of the standard DNA backbone with an immunologically active gene specific to each viral strain – the gene cassette. The delivery device is a fully developed and patented system, called Particle Mediated Epidermal Delivery (PMED™), whereby gold particles coated in the vaccine DNA are propelled into the skin using high-pressure helium. In this way, vaccine DNA is delivered directly to cells of the immune network in the skin, thereby stimulating immunity. This approach provides a rapid route to vaccine development that can be applied to existing and emerging flu strains including, for example, the threat of the emergence of a pandemic flu strain.

Results of previous preclinical and clinical testing of PowderMed's DNA-based influenza vaccines, including H3 and Avian H5 strains utilizing PMED, show consistent and robust immune responses in animals and humans at microgram doses.

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