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**Profectus Presents Preclinical Data Demonstrating that a Single Dose of Multi-Component Vaccine Provides Complete Protection Against Zaire and Sudan Species of Ebola Virus and Marburg Virus**

- Results confirm company’s selection of VesiculoVax™ rVSVN4CT1 vector as providing the best combination of safety and immunogenicity for the multi-component Ebola/Marburg vaccine –

*BALTIMORE, Md., November 17, 2015* – Profectus BioSciences, Inc., a clinical-stage vaccine company developing innovative vaccines for the prevention and treatment of infectious diseases and the treatment of cancer, announced the results of preclinical data demonstrating that a single dose of a multi-component vaccine based on the company’s VesiculoVax™ vector platform provides complete protection against Ebola and Marburg viruses. The data were presented at the Filovirus Medical Countermeasures (MCM) Workshop in Fort Detrick, Md. The vaccine is in development by Profectus with support from the U.S. Department of Defense’s Joint Vaccine Acquisition Program (JVAP), the Biomedical Advanced Research and Development Authority (BARDA), and the National Institutes of Health (NIH).

“We have worked for several years to develop a single vaccine to protect against all the filoviruses,” said John Eldridge, PhD, Chief Scientific Officer of Profectus, who presented the data. “In addition to the 2014 outbreak of Ebola virus Zaire in West Africa, outbreaks of both Marburg virus and Ebola virus Sudan have occurred recently and underscore the need for a vaccine that provides broad protection against all filovirus strains. These results demonstrate that the components of the VesiculoVax™ trivalent Ebola/Marburg vaccine do not interfere with each other and work together to provide the needed breadth of protection. With the continued generous support of the MCS-JVAP, BARDA, and the NIH, we are advancing into a series of clinical trials and anticipate the first human dose of the multi-component vaccine will be administered in mid-2016.”

In a presentation entitled, “Development of a Tri-Valent, Attenuated, rVSV-Vectored Vaccine for Single Dose Protection Against All Filovirus Species,” Dr. Eldridge presented preclinical data demonstrating that:

- a single dose of a multi-component vaccine is able to confer complete protection against the virulent low-passage filovirus isolates selected by an NIH/CDC/FDA/DOD committee to be the reference strains for testing vaccine efficacy
- the highly attenuated multi-component vaccine selected by Profectus for advancement into clinical evaluation provides an excellent combination of safety and immunogenicity

The vaccine contains a blend of three VesiculoVax™ rVSVN4CT1 vectors and is designed to provide protection against all strains of Ebola and Marburg viruses. To facilitate stockpiling, distribution, and field use, Profectus is developing a freeze-dried version of the vaccine that retains activity for years without the need for refrigeration.

### **About Profectus VesiculoVax™ Vaccines**

Profectus has developed the highly immunogenic VesiculoVax™ vaccine delivery system for emerging infectious disease indications where the rapid induction of neutralizing antibodies is needed to protect against the viruses that cause hemorrhagic fevers such as Ebola, Marburg, and Lassa; encephalitic disease (VEE, EEE, WEE); and arthralgic disease (Chikungunya). The Profectus VesiculoVax™ vaccine delivery technology is based on seminal discoveries made in the laboratory of Dr. John Rose and patented by Yale University. Building on these discoveries, Profectus scientists introduced multiple non-reversible genetic modifications into the prototype that synergistically attenuate the virus and provide vectors that are safe for human use. To extend the VesiculoVax™ platform, Profectus is conducting collaborative studies with scientists at the University of Texas Medical Branch (UTMB) that have identified additional vesiculoviruses with utility as vaccine vectors. The resulting VesiculoVax™ platform consists of a family of non-cross reactive vaccine vectors that are constructed and attenuated so they do not cause illness in animal or humans using methods exemplified with rVSV. Profectus has demonstrated the safety and immunogenicity of its VesiculoVax™ rVSV-based vaccines against HIV in human clinical trials.

### **About Profectus BioSciences**

Profectus BioSciences is a clinical-stage vaccine company developing innovative vaccines for the prevention and treatment of infectious diseases and the treatment of cancer. Profectus vaccines are based on the company's proprietary VesiculoVax™ and DNA vaccine delivery platforms. Used alone, the first-in-class VesiculoVax™-vectored vaccines lead to rapid expansion of B cells to provide protection against emerging infectious diseases of public health and biodefense importance such as Ebola, Marburg, Chikungunya, and the Equine Encephalitis viruses. When used as a boost after priming the immune system with best-in-class pDNA vaccines, VesiculoVax™-vectored vaccines lead to the expansion of primed T cells into effector cells that are uniquely suited to killing virally infected cells and cancers. Current programs using the Prime/Boost System of Vaccines (PBS Vax™) strategy include hepatitis B virus (HBV), human papilloma virus (HPV), herpes simplex virus type 2 (HSV-2), and human immunodeficiency virus (HIV). Partners and collaborators include the Galveston National Laboratory at UTMB, Yale University, the Institute of Human Virology, the Center for HIV/AIDS Vaccine Immunology, the National Cancer Institute, the NIH Division of AIDS, the

Bill and Melinda Gates Foundation, the International AIDS Vaccine Initiative, the HIV Vaccines Trials Network, and the AIDS Clinical Trials Group. Profectus has been funded by Cross Atlantic Capital Partners (“XACP”) of Radnor, Pennsylvania. XACP’s primary investor is the Pennsylvania Public School Employees' Retirement System (PSERS). For more information, please visit [www.profectusbiosciences.com](http://www.profectusbiosciences.com).

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