Public Health Agency of Canada and
US Army Medical Research Institute of Infectious Diseases

News Release

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Researchers report breakthrough against world's deadliest viruses

New Ebola, Marburg Vaccines effective in animal models

***NOTE: The information in this news release is under EMBARGO until 12:00 noon (Central)/1:00 pm (Eastern), Sunday, June 5, 2005.**

WINNIPEG, Manitoba and FREDERICK, Maryland – Scientists from the Public Health Agency of Canada - with assistance from the U.S. Army Medical Research Institute of Infectious Diseases - have developed vaccines against the Ebola and Marburg viruses that have been shown to be effective in non-human primates.

In a study published in this month's *Nature Medicine,* Canadian researchers Dr. Heinz Feldmann and Dr. Steven Jones of PHAC's National Microbiology Laboratory and Dr. Thomas Geisbert of USAMRIID report that the vaccines have proven 100 percent effective in protecting monkeys against infection from these often deadly viruses.

Monkeys are known to develop hemorrhagic fever symptoms that are similar to those observed in humans infected by these viruses. Demonstrating that these vaccines are safe and effective in monkeys is a promising indicator of their real potential for use in humans.

"When you see the tragedies these viruses cause, it's very frustrating that we can't do more to help people," said Dr. Feldmann, who (along with Dr. Jones and others from PHAC) has been providing on-site rapid diagnostic support to the current Marburg outbreak in Angola. "It'll be some time before we can use these vaccines in the field, but it's satisfying to know that we're getting closer."

According to Dr. Geisbert, this is the first vaccine system, or platform, that has protected nonhuman primates from both Ebola and Marburg.

"In addition, the vaccine targets dendritic cells, which are the same cells that Ebola and Marburg attack," said Dr. Geisbert. "These cells are also important in generating a protective immune response. So the vaccine goes exactly where we want it to go."

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The study describes how Canadian researchers developed the vaccines by replacing a surface protein in an animal pathogen, called vesicular stomatitis virus, with a surface protein from either the Ebola or Marburg viruses. Following extensive work, including trials with mice and guinea pigs, the PHAC researchers collaborated with USAMRIID to prove their efficacy in non-human primates. This research was supported by a grant from the Canadian Institutes of Health Research.

Canadian Health Minister Ujjal Dosanjh and Dr. Carolyn Bennett, Minister of State (Public Health), praised the work of the scientists in developing the vaccine and providing support to the outbreak in Angola.

"This speaks volumes about the dedication and expertise of these individuals, and also what can be achieved through international collaboration," said Minister Dosanjh. Minister Bennett added that people everywhere could benefit from the vaccine development, "in stopping outbreaks where they originate as well as reducing the risk that these viruses will spread."

Colonel Erik A. Henchal, commander of USAMRIID, said the study illustrates the benefits of collaborative research to develop medical countermeasures for biodefense.

"Relationships like this contribute to better science and ultimately better protection for military service members and civilians alike."

PHAC's National Microbiology Laboratory is Canada's only Containment Level 4 laboratory, where pathogens such as Ebola and Marburg can be worked with safely. The Winnipeg based laboratory has been at the forefront of research into SARS, West Nile virus, anthrax and other dangerous pathogens.

USAMRIID, located at Fort Detrick, Maryland, is the lead medical research laboratory for the U.S. Biological Defense Research Program, and plays a key role in national defense and in infectious disease research. The Institute's mission is to conduct basic and applied research on biological threats resulting in medical solutions (such as vaccines, drugs and diagnostics) to protect the war fighter. USAMRIID is a subordinate laboratory of the U.S. Army Medical Research and Materiel Command.

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