



Uniformed Services University
of the Health Sciences
4301 Jones Bridge Road
Bethesda, MD 20814-4799

Release No.07-08-27

August 23, 2007

Contact: Office of External Affairs

Voice: 301-295-1219 Fax: 301-295-3757

Email: anicholson@usuhs.mil

News Release

U.S., Australian Scientists Demonstrate how Deadly Nipah Virus can be Transmitted to Offspring During Pregnancy

BETHESDA, Md. — A collaborative team of scientists from the Uniformed Services University of the Health Sciences (USU) and the Australian Animal Health Laboratory have demonstrated an important biological feature of the deadly Nipah virus that can infect and kill both animals and humans.

In the cover article of the Sept. 15 edition of the *Journal of Infectious Diseases*, published ahead of print on Aug. 14, Dr. Christopher Broder, Professor of Microbiology and Immunology at USU, along with his Australian colleagues, reported the first experimental evidence that Nipah virus can be vertically transmitted in cats, a naturally infected animal host which also consistently exhibits characteristic disease pathology caused by Nipah virus. An accompanying editorial commentary further highlighting the importance of their findings is published in the same issue.

Earlier work by this same group of investigators developed a vaccine based on a component of the virus known as the G glycoprotein which demonstrated complete protection from infection by Nipah virus in the cat model. These results were reported in the December 2006, No.27 issue of the *Journal of Virology*.

Nipah virus and its closely related cousin Hendra virus (henipaviruses) are recently emerged viral pathogens and both agents are restricted to the highest level of containment; biosafety level (BSL)-4 and considered to be potential biological terror agents. Hendra virus emerged in Queensland, Australia, in 1994, killing one human and 14 horses and it was responsible for at least four other sporadic outbreaks involving horses and humans between 1994 and 2006. Nipah virus emerged in 1998-1999 in Malaysia, resulting in the death of more than 100 people and the culling of more than one million pigs. Since then, several Nipah virus outbreaks have been reported between 2001 and 2007 taking greater than 80 lives in Bangladesh and India and these more recent outbreaks have involved person-to-person transmission and have demonstrated a higher incidence of acute respiratory distress syndrome and higher case-fatality rates between 60%-75%.

The current study, supported by the Middle Atlantic Regional Centers of Excellence and the National Institutes of Health, has important implications for the mechanisms of Nipah virus spread among animal populations and humans. The results affirm observations with Hendra virus in horses, guinea pigs, and bats that demonstrate that henipaviruses can replicate to high titers in both adult and fetal tissues, indicating that both horizontal and vertical routes of transmission can play a role in spillover events. They also suggest a possible role for cats in Hendra and Nipah virus outbreaks that has yet to be fully investigated.

- more -

Established by the U.S. Congress in 1972, the Uniformed Services University of the Health Sciences (www.usuhs.mil) is located on the campus of the National Naval Medical Center in Bethesda, Md., and is the nation's only federal school of medicine and graduate school of nursing.

For more information, contact the Office of External Affairs, (301) 295-1219, or via email at swillis@usuhs.mil.

- end -