



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

Release No.08-05-23

May 28, 2008

Contact: Office of External Affairs

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

Email: anicholson@usuhs.mil

News Release

USU Scientist Awarded NIAID Grant to Further Study of Preventive HIV Vaccine

BETHESDA, Md. — CAPT Gerald V. Quinnan, Jr., M.D., USPHS, professor and chair, Department of Preventative Medicine and Biometrics at the Uniformed Services University of the Health Sciences (USU), was named one of 10 scientists to be awarded a grant from the National Institute of Allergy and Infectious Diseases (NIAID), part of the National Institutes of Health.

Dr. Quinnan has conducted extensive research with HIV and recently had the results of his research titled: “Extensively Cross-Reactive Anti-HIV-1 Neutralizing Antibodies Induced by gp140 Immunization” published in *Proceedings of the National Academy of Sciences*.

The grant is being awarded in order to advance underdeveloped approaches to designing a preventive HIV vaccine. The NIAID is launching a new program to foster the study of B cells, immune cells that can produce antibodies with the capacity to neutralize HIV. The \$15.6 million, five-year program will strengthen and expand the scientific foundation of HIV vaccine research through a network of 10 research teams nationwide that will share resources, methods and data to accelerate progress.

In the immune system, B cells recognize key parts of microbes, called antigens. Then, in cooperation with T cells—parts of the immune system that kill cells infected by pathogens—a reaction is triggered that leads B cells to produce antibodies, which can lock onto antigens and sweep them out of the body. HIV is devilishly good at fooling B cells and shielding itself from antibodies or changing its antigenic parts, so antibodies can rarely rid the body of the virus.

The new NIAID research program aims to uncover mechanisms that will enable scientists to outwit HIV and stimulate the B-cell production of long-lasting antibodies that can neutralize many strains of the virus; such antibodies are known as “broadly neutralizing.”

In recent years, investigator-initiated grants supported by NIAID have focused more heavily on T-cell based approaches to preventive HIV vaccines than on B-cell based ones. Many experts believe a successful HIV vaccine will probably need to activate both T cells and B cells; consequently, NIAID’s creation of the new B-cell research program is an important stimulus for HIV vaccine discovery.

Learning to Care for Those in Harm's Way

Some evidence suggests that the program's goal of eliciting broadly neutralizing antibodies to HIV, although extremely difficult, may be feasible. Scientists have discovered that some HIV-infected individuals naturally but rarely produce broadly neutralizing antibodies to HIV. Giving such antibodies experimentally to monkeys protected the animals from HIV infection after exposure to the virus. Scientists now face the challenge of how to stimulate the human immune system to predictably produce broadly neutralizing antibodies to HIV through vaccination.

NIAID is a component of the National Institutes of Health. NIAID supports basic and applied research to prevent, diagnose and treat infectious diseases such as HIV/AIDS and other sexually transmitted infections, influenza, tuberculosis, malaria and illness from potential agents of bioterrorism. NIAID also supports research on basic immunology, transplantation and immune-related disorders, including autoimmune diseases, asthma and allergies.

Located on the grounds of Bethesda's National Naval Medical Center and across from the National Institutes of Health, USU is the nation's federal school of medicine and graduate school of nursing. The university educates health care professionals dedicated to career service in the Department of Defense and the U.S. Public Health Service. Students are active-duty uniformed officers in the Army, Navy, Air Force and Public Health Service, who are being educated to deal with wartime casualties, national disasters, emerging infectious diseases, and other public health emergencies. Of the university's more than 4,000 physician alumni, the vast majority serve on active duty and are supporting operations in Iraq, Afghanistan, and elsewhere, offering their leadership and expertise.

For more information, contact the Office of External Affairs at (301) 295-1219 or visit the USU Web site at: www.usuhs.mil.

- End -