



## **ADENOVIRUS NEUTRALIZATION ASSAY TRAINING: ROYAL THAI ARMY- ARMED FORCES RESEARCH INSTITUTE OF MEDICAL SCIENCES AND US MILITARY HIV RESEARCH PROGRAM COLLABORATION**

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### **Abstract**

Adenoviral vectors are one of the most robust gene-based vaccine vectors available and developed for HIV-1 and other pathogens. The advantages of adenovirus vectors are their capacity to accommodate large transgenes, the low frequency of integration into host genome and ability of the virus to induce mucosal immunity as well as the feasibility of oral or intranasal administration. However, a major hurdle that has prevented the effective application of these vectors is the host immune response. The majority of human population has been exposed to this virus and have pre-existing neutralization antibodies that can attenuate vaccine delivery. Few studies have described the pre-existing neutralizing antibodies to adenovirus serotypes, especially in Thai population. Understanding pre-existing immunity to candidate vaccine vectors may help in application of vaccines in this region. Thus, in August 2009, the Royal Thai Army (RTA)-AFRIMS scientists visited the Rockville Laboratory of US Army HIV Research Program, WRAIR and NIAID Vaccine Immunogenicity T- Cell and Antibody Laboratory (NVITAL) in order to train Luciferase- base virus Neutralization assay. Neutralization is measured as a reduction in luciferase reporter gene expression after a single round of infection in TZM-bl cells. This method can detect and measure neutralizing antibodies against many subtypes of Adenoviruses. It is a high-throughput technology for detect more samples. In the near future we have plan to collaborate in studying the seroprevalence of Adenovirus neutralizing antibodies in Thai population and other research studies involving this new technology.

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