Graduate Institute of Veterinary Microbiology, National Chung Hsing University

Vaccination of Mice with Gonococcal TbpB Expressed In Vivo from Venezuelan Equine Encephalitis Viral Replicon Particles

Advisor:         Student: Ping-Yi Chen     Date: 2008/03/20

Abstract

*Neisseria gonorrhoeae*, the causative agent of gonorrhea, is one of the most common sexually transmitted pathogens worldwide. The gonococcal transferrin binding protein B (TbpB) has generated particular interest as a vaccine antigen because it is ubiquitously expressed among clinical isolates and well conserved (2). Venezuelan equine encephalitis virus (VEE) is an *Alphavirus* in the family *Togaviridae*. Replication incompetent VEE replicon particles (VRPs) have proven to be highly effective vaccines in a number of preclinical infectious disease and tumor models (1). In this study, Thomas et al. reported that the immunogenicity of gonococcal TbpB expressed with and without a eukaryotic secretion signal from a nonpropagating VEE VRPs delivery system. The results showed that the response of mice immunized with VRPs encoding TbpB produced significant amount of serum antibody and was consistently more Th1 biased than the response of mice immunized with recombinant protein alone. Most of the immunization groups produced significant specific antibody binding to the intact surface of the homologous *N. gonorrhoeae* strain. Immunization with TbpB VRPs with a eukaryotic secretion signal or boosting with recombinant protein resulted in specific IgG and IgA in mucosal secretions. Therefore, the TbpB VRP system has potential for an *N. gonorrhoeae* vaccine (3).

References:

