



**A Strategy Symposium
March 24-25, 2009 – Berkeley, California**

THE VACCINE AND MICROBICIDE ALLIANCE

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BACKGROUND

The Vaccine and Microbicide (VAM) alliance exploits antibodies as mechanisms of exclusion by developing complimentary active (vaccines) and passive (microbicides) mucosal immunization strategies to achieve protective antibody concentrations in the reproductive tract. Four key challenges have limited the number of successful mucosal vaccines to date: (1) high level of antigen required; (2) formulation; (3) delivery devices; and (4) adjuvants.

EXPERIMENTAL DESIGN AND METHODS

The Mucosal Antigens project explores ways to create highly immunogenic mucosal antigens with a strong focus on particulate vaccinogens, and upon repeating arrays of antigens (HSV:gD, chlamydia:GLXA, gonorrhea: porin) to mimic natural pathogens. The Project on Mucosal Adjuvants utilizes pathogen recognition receptor (PRR) agonist(s) co-delivered (nanoparticles, VLPs, microspheres) with antigens. The Mucosal Antibodies project implements two Mab-based vaccine technologies: anti-idiotypic (anti-Id) Mabs and FcRn (the neonatal Fc receptor)-based mucosal immunization. An Industrialization Core provides cGMP manufacture and formulation of antigen/adjuvants in powders and the mapp66 (HSV/gD; HIV/CCR5 Mabs) microbicide as tablets and films. The Administrative Core conducts preclinical studies and prepares INDs. The Clinical Core designs and conducts microbicide and vaccine clinical studies at the University of Maryland Center for Vaccine Development.

SUMMARY

The VAM alliance evaluates the safety and effectiveness of multi-purpose Mab-based microbicides and mucosal vaccinogens that produce protective concentrations of antibodies in the reproductive tract.