



4th Annual

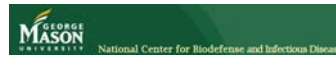
Bio-Chem Defense & Pandemic Vaccines & Therapeutics



Policy, Funding, Development, Testing and Production

April 24 - 26, 2006 • Almas Temple Club • Washington, DC

Supporting Organizations:



Pre-Conference Symposium

LATE STAGE BIODEFENSE VACCINES AND THERAPEUTICS DEVELOPMENTS

A Briefing from Leading Biodefense Researchers

Monday, April 24, 2006

8:00 a.m. to 5:00 p.m.

Final Agenda

- 8:00 – 8:30 Welcome and Introduction by the Symposium Chairs
Michael Kurilla, M.D., *Director, Office of BioDefense Research Affairs, NIAID, NIH*
George Ludwig, Ph.D., *Science Director, USAMRIID*
- 8:30 – 9:15 DEVELOPMENT OF WELL CHARACTERIZED RECOMBINANT ANTHRAX (RPA) VACCINE
Kathrin Jansen, Ph.D., *Senior Vice President, Research and Development & Chief Scientific Officer, VAXGEN*
- 9:15 – 10:00 BOTULINUM TOXIN VACCINES: PAST, PRESENT AND FUTURE
Leonard Smith, Ph.D., *Chief, Molecular Biology Branch, USAMRIID*

In the 1930s, formalin-inactivated toxoids were the first vaccines tested in humans against botulinum toxin. In the late 1970s, a pentavalent botulinum toxoid (PBT) received Investigational New Drug (IND) status under the Centers for Disease Control's IND 161 (at risk workers) and under the United States Army's Office of Surgeon General IND 3723 (for military deployment). This PBT vaccine has been studied and used as an investigational vaccine from 1979 until the present time. In 2004, the first recombinant subunit vaccine (rBV A/B (Pichia pastoris) vaccine) was tested in humans during a phase I clinical trial. The past, present and future directions in botulinum toxin vaccine development will be the topic of this presentation.

10:00 – 10:30 *Morning Networking Break*

10:30 – 11:15 **FILOVIRUS VACCINE DEVELOPMENT**

- Evaluation of Immune Correlates of Protection

Nancy Sullivan Ph.D., *Chief, Biodefense Research Section, NIH, Laboratory of Immunology at the Vaccine Research Center*

11:15 – 12:00 **DESIGN AND DEVELOPMENT OF ALPHAVIRUS REPLICON VACCINES FOR BIODEFENSE**

- Challenges of replicon-based vaccine development – production and stabilization

Jonathan Smith, Ph.D., *Chief Scientific Officer, ALPHAVAX*

12:00 – 1:30 *Group Luncheon*

1:30 – 2:15 **STRATEGIES FOR FDA-REGULATED SAFETY STUDIES OF BIODEFENSE VACCINES**

Robert House, Ph.D., *Vice President, Science, DYNPORT VACCINES*

Vaccines are unique among human medicines in that they are usually given to large numbers of otherwise healthy individuals; thus, the margin of safety prior to and during their administration to humans must be extraordinarily high. This is particularly true of biodefense vaccines, in which safety is one of main endpoints of clinical testing. To ensure the highest degree of safety prior to first human use, it is important that preclinical toxicology studies be designed and conducted properly. This talk will describe testing strategies that have been employed successfully for several biodefense vaccines.

- 2:15 – 3:00 **DEVELOPING AN ORAL ANTIVIRAL AGENT FOR THE TREATMENT OF SMALLPOX INFECTION**
- Challenges associated with developing an oral therapeutic with the same properties as the IV product
- George Painter, Ph.D., President & CEO, CHIMERIX**
- 3:00 – 3:30 *Afternoon Networking Break*
- 3:30 – 4:15 **ENGINEERING A POTENT RECOMBINANT ANTITOXIN FOR BOTULINUM NEUROTOXIN**
- James Marks, M.D., Ph.D., Professor, Anesthesia and Pharmaceutical Chemistry, UCSF**
- Equine antitoxin is the current treatment for botulism. In designing a recombinant antitoxin for treatment of biothreat botulism, consideration must be paid to: 1) covering the multiple subtypes of botulinum neurotoxin (BoNT) that exist; and 2) engineering extraordinary potency. Antibody development is further complicated by the fact that no single mAbs have been identified that neutralize BoNT with anywhere near the potency required. Using yeast display and antibody gene libraries from humans immunized with botulinum toxoid, we have identified and engineered a panel of mAbs that bind all four BoNT/A subtypes with high affinity. A combination of three of these mAbs neutralize BoNT/A with extraordinary potency and have been moved into later stage development. The mechanism of antibody synergy will be discussed.*
- 4:15 – 5:00 **ANTIVIRAL HOST ORIENTED THERAPEUTICS**
- Michael Goldblat, Ph.D., President & CEO, FUNCTIONAL GENETICS**
- Historically, treatments for viral infectious diseases target the virus but not the host. However, denying a virus host processes required for its life cycle effectively blocks the viral life cycle and any resulting pathogenesis. Rationale for shifting the paradigm of drug development for viral diseases from attacking the pathogen to the targeting of host genes is grounded in three premises: 1) viruses rely on the cooperation of host cell genes, many of which are highly conserved among viruses, to infect their hosts and be propagated, 2) host genes that are absolutely essential to the virus may not be essential to the host, and these non-essential host genes potentially provide targets for therapeutics, and 3) interventions that attack host targets, rather than viral targets, will be less subject to the effects of viral mutations that are either engineered mutations or spontaneous mutations that lead to drug resistance. TSG101, a host protein that plays a crucial role in the release of hemorrhagic fever viruses from host cells, is a hallmark example of a host oriented broad spectrum therapeutics target. TSG101 is a host cellular protein normally involved in endosomal protein sorting machinery. Upon viral infection, the host TSG101 is hijacked by enveloped viruses such as Ebola to provide the essential interaction necessary for successful budding from the host cells.*
- 5:00 Conference Adjourns