NIAID – Dengue Vaccine Initiative
Consultation on Dengue Vaccines

JUNE 26 – 28, 2013
Fishers Lane Conference Center, Rockville, MD

Organizers:

Cristina Cassetti
NIAID, Bethesda, MD

Scott Halstead
Dengue Vaccine Initiative – International Vaccine Institute

Aravinda de Silva
University of North Carolina School of Medicine, Chapel Hill, NC

Ted Pierson
NIAID, Bethesda, MD

Eva Harris
University of California, Berkeley, Berkeley, CA

Steve Whitehead
NIAID, Bethesda, MD

Helen Quill
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Wednesday, June 26, 2013

8:00 am  Registration
8:25 am  Carole Heilman
National Institutes of Health, Bethesda, MD
NIAID Welcoming Remarks
8:35 am  Georges Thiry
International Vaccine Institute, Seoul, Korea
DVI Welcoming Remarks

**TOPIC: Lessons learned from vaccine developers relevant to protective immunity**

**CHAIR: Georges Thiry**

8:45 am  Jorge Osorio
Takeda, Madison, WI
Takeda: Update on tetravalent DENVax
9:05 am  Alex Schmidt
GSK Vaccines, Rixensart, Belgium
GSK: Progress report: killed dengue vaccine
9:25 am  Beth-Ann Coller
Merck and Co., North Wales, PA
Merck: Sub-unit vaccine
9:45 am  Steve Whitehead
National Institutes of Health, Bethesda, MD
NIH: Live-attenuated tetravalent dengue vaccine

10:15 am  BREAK
10:30 am  Jean Lang
Sanofi Pasteur, Lyon, France
Sanofi: CY dengue tetravalent vaccine
11:00 am  Bruno Guy
Sanofi Pasteur, Marcy l’Étoile, France
Immune profiling of dengue tetravalent vaccine phase III stage candidate
11:30 am  Discussion
12:00 pm  LUNCH
**TOPIC: Lessons learned from dengue and related flavivirus vaccines: Generation of the immune response**

**CHAIR: Rafi Ahmed**

1:00 pm   Bali Pulendran  
*Yerkes Institute, Emory Vaccine Center, Emory University, Atlanta, GA*  
Studies in humans on immune responses to 17D yellow fever vaccine

1:30 pm   Stephen Popper  
*Stanford University, Stanford, CA*  
Innate immunity as a correlate of protection of live-attenuated dengue vaccines

2:00 pm   Jens Wrammert  
*Emory University, Atlanta, GA*  
Human B cell responses during dengue infection

2:30 pm   Mark Slifka  
*Oregon Health and Science University, Beaverton, OR*  
Impact of infection or vaccination on pre-existing serological memory

3:00 pm   **B R E A K**

**TOPIC: Human antibody and T cell responses to dengue infection/vaccination**

**CHAIR: Rafi Ahmed**

3:15 pm   Aravinda de Silva  
*University of North Carolina School of Medicine, Chapel Hill, NC*  
Studies on polyclonal dengue neutralizing antibody responses to primary dengue infection

3:45 pm   James Crowe  
*Vanderbilt University, Nashville, TN*  
Molecular and genetic basis for human B cell responses to dengue virus infection or vaccination

4:15 pm   Ted Pierson  
*National Institutes of Health, Bethesda, MD*  
Studies on neutralizing virion epitopes raised following administration of the NIH DENV 1 vaccine

4:45 pm   Gavin Screaton  
*Imperial College, London, UK*  
A complex interplay between T and B cell responses in dengue
Thursday, June 27, 2013

**TOPIC:** Human antibody and T cell responses to dengue infection, lessons from cohort studies

**CHAIR:** Alex Sette

8:00 am  Eva Harris  
*University of California, Berkeley, Berkeley, CA*
Immune responses in Nicaragua pediatric cohort study

8:30 am  Tim Endy  
*SUNY Upstate Medical University, Syracuse, NY*
Thailand cohort studies

9:00 am  Tom Scott  
*University of California, Davis, Davis, CA*
Iquitos cohort: epidemiological and serological evidence of heterotypic and multitypic protection against dengue disease

9:30 am  Wei-Kung Wang  
*John A. Burns School of Medicine, University of Hawaii at Manoa, Honolulu, HI*
Immune status of the host and quality of cross-reactive antibodies generated

10:00 am  Alex Sette  
*La Jolla Institute for Allergy and Immunology, La Jolla, CA*
Human T cell responses to dengue infection

10:30 am  **BREAK**

10:45 am  Daniela Weiskopf  
*La Jolla Institute for Allergy and Immunology, La Jolla, CA*
CD8⁺ T cell responses in NIH vaccinees compared with persons convalescent from wild-type dengue infections

11:00 am  Discussion

**TOPIC:** Basic virological studies relevant to vaccine evaluation

**CHAIR:** Alex Sette

11:15 am  Ralph Baric  
*University of North Carolina School of Medicine, Chapel Hill, NC*
Use of recombinant dengue viruses to map antibody responses and transplant epitopes
11:45 am Leah Katzelnick
University of Cambridge, Cambridge, UK
Dengue antigenic cartography

12:00 pm L U N C H

CHAIR: Cristina Cassetti

1:00 pm Shee-mei Lok
Duke – NUS, Singapore
Quaternary structure dependent epitope recognized by potent human antibodies

1:30 pm Kim Dowd
National Institutes of Health, Bethesda, MD
Viral structural dynamics contributing to neutralization

1:50 pm Richard Kuhn
University of California, Berkeley, Berkeley, CA
New lessons in dengue virus structure and composition and their influence on vaccine strategies

TOPIC: Dissecting immune responses in animal models
CHAIR: Cristina Cassetti

2:20 pm Michael Diamond
Washington University School of Medicine, St. Louis, MO
Mice lacking type I IFN signaling and the development of shock syndrome. Is it really dengue?

2:50 pm B R E A K

3:10 pm Sujan Shresta
La Jolla Institute for Allergy and Immunology, La Jolla, CA
Immunological mechanisms of protection mediated by a dengue vaccine candidate

3:40 pm Eva Harris
University of California, Berkeley, Berkeley, CA
Mice: mechanisms of protection in heterotypic/multitypic dengue infections

4:10 pm Raphael Zellweger
La Jolla Institute for Allergy and Immunology, La Jolla, CA
Cellular immunity to dengue reinfection
Friday, June 28, 2013

**TOPIC: Protection measured by live virus challenge**

**CHAIR: Scott Halstead**

8:30 am  
Scott Halstead  
*Dengue Vaccine Initiative, International Vaccine Institute, Bethesda, MD*  
In vitro and in vivo observations on heterotypic and multitypic dengue immunity

9:00 am  
Anna Durbin  
*Johns Hopkins Bloomberg School of Public Health, Baltimore, MD*  
NIH vaccines: live virus challenge of monotypic and multitypic immunes

9:30 am  
Stephen Thomas  
*Walter Reed Army Institute of Research, Silver Spring, MD*  
Review and status of WRAIR dengue challenge model

**TOPIC: Protective immunity: concurrent challenges**

**CHAIR: Scott Halstead**

10:00 am  
Cameron Simmons  
*Oxford University Clinical Research Unit, Ho Chi Minh City, Vietnam*  
Human to mosquito transmission studies and implications for vaccines

10:20 am  
Robert Beatty  
*University of California, Berkeley, Berkeley, CA*  
NS1 toxicity: do we understand the pathogenesis of the dengue vascular permeability syndrome?

10:40 am  
Discussion: Dengue vaccines – where to go from here

12:00 pm  
**DEPARTURE**