

**Food and Drug Administration
Center for Biologics Evaluation and Research**

**SUMMARY MINUTES
158th VACCINES AND RELATED BIOLOGICAL PRODUCTS ADVISORY
COMMITTEE**

November 8, 2019

Committee Members

Hana El Sahly, M.D., Chair
Archana Chatterjee, M.D., Ph.D. +
Hayley Gans, M.D.
Holly Janes, Ph.D.
Michael Kurilla, M.D., Ph.D.
Myron Levine, M.D., D.T.P.H., F.A.A.P. +
H. Cody Meissner, M.D.
Arnold Monto, M.D. +
Paul Offit, M.D. +
Andrea Shane, M.D., M.P.H., M.Sc. +
Paul Spearman, M.D.
Geeta K. Swamy, M.D.
Melinda Wharton, M.D., M.P.H.

Industry Representatives+

David Greenberg, M.D.+
Leonard Friedland, M.D.<+

Consumer Representative

Sheldon Toubman, J.D.

Designated Federal Officer (DFO)

Prabhakara Atreya, Ph.D.

Committee Management Specialist(s)

Monique Hill, M.H.A.
Joanne Lipkind, M.S.

+ Not in attendance

* By phone

< Alternate Industry representative

Temporary Voting Members

Marc Fischer, M.D., M.P.H.
Steven A. Pergam, M.D., M.P.H., FIDSA*

**Temporary Non-Voting Industry
Representative**

Lisa L. Bollinger, M.D., FAAP

Guest Speakers

MAJ Damon Ellison, Ph.D.
Ann Powers, Ph.D.
Pierre Roques, Ph.D., H.D.R.
Scott Weaver, Ph.D.

Industry Speakers

Allison August, M.D., ModernaTX
Wolfgang Bender, M.D., Ph.D., M.P.H.,
M.H.A., Valneva
Christian Mandl, M.D., Ph.D., Themis
Kelly Warfield, Ph.D., Emergent
BioSolutions

FDA Speakers

Bharat Khurana, Ph.D.
Sudhakar Agnihothram, Ph.D.

FDA Participants

Marion Gruber, Ph.D.
Doran Fink, M.D., Ph.D.
Philip Krause, M.D.
Jerry Weir, Ph.D.
CDR Valerie Marshall, M.P.H., P.M.P.

These summary minutes for the November 8, 2019 Meeting of the Vaccines and Related Biological Products Advisory Committee were approved on _____, 2019.

I certify that I participated in the November 8, 2019 Meeting of the Vaccines and Related Biological Products Advisory Committee and that these minutes accurately reflect what transpired.

Prabhakara Atreya, Ph.D.
Designated Federal Officer

Hana El Sahly, M.D.
Chair

On November 8, 2019 at 8:30 a.m. Eastern Standard Time (EST), the 158th Meeting of the Vaccines and Related Biological Products Advisory Committee (VRBPAC) met in open session to discuss and make recommendations on the development of Chikungunya vaccines. Dr. Hana El Sahly, the Chair, called the meeting to order and invited the committee members to introduce themselves. The DFO made administrative remarks and read the Conflict of Interest (COI) statement into the public record. It was stated that no waivers were issued for conflicts of interest for this meeting.

Dr. Bharat Khurana of FDA introduced the meeting topic and provided background on Chikungunya vaccine development with a presentation titled “Development of Chikungunya Vaccines: Approaches to Demonstrating Effectiveness.” This was followed by a presentation by Dr. Ann Powers from the CDC titled, “Epidemiology of Chikungunya.” Then Dr. Pierre Roques from Francois Jacob Institute of Biology in France made a presentation entitled, “Animal Models of Chikungunya: A Key to Vaccine Validation.”

After a 15-minute break, MAJ Damon Ellison from Walter Reed Army Inst. of Research made a presentation titled, “Evidence of Ongoing CHIK Transmission in Southern Thailand.” Following this presentation, presentations were made by the following four Industry Speakers:

- Dr. Kelly Warfield from Emergent BioSolutions
- Dr. Allison August from ModernaTX
- Dr. Christian Mandl from Themis and
- Dr. Wolfgang Bender from Valneva

After a 40-minute lunch break, Open Public Hearing session was announced. However, there were no public speakers pre-registered or presented themselves for this portion of the meeting.

After a brief question and answer period for the above four Industry Speakers, Dr. Scott Weaver from the University of Texas Medical Branch made a presentation titled “Passive Transfer Studies to Determine Correlates of Protective Immunity Against Chikungunya Fever.” Finally,

Dr. Sudhakar Agnihothram of FDA made a presentation titled “Approaches to Assessing Effectiveness of Chikungunya Vaccines.”

After a 10-minute break, an Open Committee Discussion was held in which the following two topics were discussed. This was a non-voting meeting in which the committee deliberated on the following topics during the open committee discussion session.

1. Discuss the following aspects of clinical studies to assess effectiveness of CHIK vaccines:

- Feasibility of randomized, controlled clinical disease endpoint efficacy trials
- Role of sero-epidemiologic data in identifying an immune marker reasonably likely to predict vaccine effectiveness

The committee discussed the feasibility of randomized controlled clinical disease endpoint efficacy trials to assess effectiveness of chikungunya virus vaccines. Committee members opined that due to the irregular and unpredictable nature of chikungunya outbreaks, randomized controlled clinical efficacy trials may not be feasible in the immediate future.

While data from prospective sero-epidemiological studies suggest an association between baseline chikungunya virus-neutralizing antibody titers and subsequent chikungunya virus infection, Committee members questioned the exclusive use of such data to identify an immune marker reasonably likely to predict vaccine effectiveness, because antibody titers after natural infection may also be associated with other protective immune responses that are not relevant to vaccines.

2. Discuss the utility of the non-human primate (NHP) challenge model to assess effectiveness of CHIK vaccines, including:

- Effectiveness endpoints, such as viremia, arthritis-related endpoints or other essential endpoints
- Role of passively transferred sera or purified IgG from vaccinated humans in identifying an immune marker reasonably likely to predict vaccine effectiveness
- Whether additional information is needed to support the utility of the NHP challenge model

Committee members generally supported using the combination of data from seroepidemiologic studies and from animal challenge studies (in animals that received passive transfer of antibody from immunized humans) to identify an immune marker reasonably likely to predict vaccine effectiveness. Members opined that prevention of chikungunya viremia would be a relevant endpoint for such studies.

The meeting was then adjourned on November 8, 2019 at 4:30 PM EST.

Additional information and details may be obtained from the transcript and the recording of the webcast of the meeting that may be viewed at:

<https://collaboration.fda.gov/plqsw56uezyt/>

<https://collaboration.fda.gov/pwv0hmqa5a58/>

<https://collaboration.fda.gov/pj93dnxrqjy9/>

<https://collaboration.fda.gov/pfujuffyllzc/>