

# Emerging infectious diseases vaccines



Translating science  
into global health impact

**IAVI is applying its extensive vaccine development expertise and working with a group of expert international partners to develop vaccines to prevent emerging infectious diseases (EIDs).**

## A platform approach to EID response

The coronavirus pandemic that emerged in 2019 and ongoing Ebola virus disease and Lassa fever epidemics in western and southern Africa demonstrate the urgent need for vaccines for outbreak pathogens. IAVI has a robust preclinical vaccine pipeline to address such challenges.

IAVI's EID vaccine platform includes four vaccine candidates to prevent diseases of global importance: coronavirus disease 2019 (COVID-19), Lassa fever, Marburg virus disease, and Ebola Sudan virus disease. The urgency of the need for a COVID-19 vaccine is clear, and the U.S. Centers for Disease Control and Prevention has classified the viruses that cause the other diseases as high-priority agents that pose a risk to national security. They have high case fatality rates, and in addition to being epidemic threats, they have potential to be used for bioweapons.

IAVI's EID vaccine candidates are based on a recombinant vesicular stomatitis virus (rVSV) vector similar to the technology underlying Merck's highly effective Ebola Zaire virus vaccine, ERVEBO<sup>®</sup>, that was recently approved by the European Commission, the U.S. Food & Drug Administration, and regulators in several African countries.

**One of the major countermeasures that we have to address EIDs is the ... development, rapidly and efficiently, of vaccines against these pathogens.**

Anthony Fauci, M.D., Director,  
U.S. National Institute of Allergy  
and Infectious Diseases

## EIDs by the Numbers



**50%**

average case fatality rate for Ebola virus and Marburg virus disease



**100,000–300,000**

cases of Lassa fever occur annually



**15%**

average case fatality rate for people hospitalized with Lassa fever



**> 5 million**

confirmed cases of COVID-19 in only 5 months



**100%**

efficacy for the rVSV-vectored Ebola Zaire vaccine in a Phase III trial



**4**

IAVI EID vaccines in preclinical development

## IAVI's rVSV EID platform

- Based on highly efficacious Ebola vaccine technology
- State-of-the-art modular manufacturing for vaccine production
- Reduced infrastructure requirements and streamlined low-cost production of multiple vaccines
- A new solution for vaccine production during unpredictable EID outbreaks

## IAVI's Vaccine Design and Development Lab

Much of the research and development on IAVI's VSV platform is performed at the IAVI Vaccine Design and Development Lab (DDL) in Brooklyn, New York. The DDL is located at the bioscience center (BioBAT) in the historic Brooklyn Army Terminal. Since its founding in 2008 the IAVI DDL has become one of the world's leading viral vector vaccine research and development labs, known for innovation and generation of novel vaccine design concepts.

The IAVI DDL's Biosafety Level (BSL) 2 laboratories are outfitted for molecular cloning, cell culture, virology, protein chemistry, and immunology research.

### IAVI's EID Vaccine Candidates

Vaccine	Funder/Partner	Stage
<b>SARS Coronavirus 2</b> rVSVΔG-SARS-CoV-2	Merck, with funding from the Biomedical Advanced Research and Development Authority (BARDA); Government of Japan, in partnership with the World Bank	Preclinical
<b>Lassa Fever Virus</b> rVSVΔG-LASV-GPC*	CEPI	Preclinical
<b>Marburg Virus</b> rVSVΔG-MARV-GP*	US Department of Defense, Defense Threat Reduction Agency	Preclinical
<b>Ebola Sudan Virus</b> rVSVΔG-SUDV-GP*	IAVI	Preclinical

\*Technology licensed from the Public Health Agency of Canada. Partners: Batavia Biosciences; George Washington University, KAVI-Institute of Clinical Research (Kenya), Kenema Government Hospital (Sierra Leone), La Jolla Institute for Immunology; Merck & Co., Inc.; MRC/UVRI and LSHTM Uganda Research Unit; National Public Health Institute of Liberia; Projet San Francisco/Center for Family Health Research (Rwanda); Ragon Institute of MIT, MGH, and Harvard; Seattle Children's Hospital, Center for Global Infectious Disease Research; Tulane University; University of Texas Medical Branch.

IAVI gratefully acknowledges the generous support provided by the following major donors:



Foundation for the National Institutes of Health | National Institute of Allergy and Infectious Diseases | amfAR, The Foundation for AIDS Research | The Buimerc Group | Broadway Cares/Equity Fights AIDS | Cancer Research UK | The City of New York Economic Development Corporation | Congressionally Directed Medical Research Program (DoD) | GSK | The Hearst Foundations | Keith Haring Foundation

And many other generous individuals and partners around the world

As of February 2020



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