

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, intermittent outbreaks of Ebola, Lassa, and Marburg virus diseases in sub-Saharan Africa demonstrate the urgent need for vaccines for outbreak pathogens. IAVI has a robust 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. Additional COVID-19 vaccines, particularly those suitable for widespread use in low-income countries, continue to be an urgent need, 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[®], which is now approved by the U.S. FDA and registered for use in several African countries.

Nonclinical research by IAVI on the COVID-19 vaccine candidate is supported by the Defense Threat Reduction Agency (DTRA) of the U.S. Department of Defense (DoD). The Government of Japan supports IAVI's COVID-19 vaccine program.

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



> 765 million
confirmed cases of COVID-19 in 40 months



100%
efficacy for the rVSV-
vectored Ebola Zaire
vaccine in a Phase 3 trial



2
IAVI EID vaccines in clinical development;
2 in preclinical development

IAVI's rVSV EID platform

- Based on highly efficacious Ebola Zaire 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 rVSV platform is performed at IAVI's Vaccine Design and Development Lab (DDL) in Brooklyn, New York. The DDL is located at the bioscience center in the historic Brooklyn Army Terminal. Since its founding in 2008 the 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 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
Lassa Fever Virus rVSVΔG-LASV-GPC*	CEPI; European & Developing Countries Clinical Trials Partnership (EDCTP)	Phase 2
SARS Coronavirus 2** rVSVΔG-SARS-CoV-2	U.S. Department of Defense – Defense Threat Reduction Agency	Preclinical
Marburg Virus rVSVΔG-MARV-GP*	U.S. Department of Defense – Defense Threat Reduction Agency	Preclinical
Ebola Sudan Virus rVSVΔG-SUDV-GP*	Biomedical Advanced Research and Development Authority (BARDA)	Phase 1

*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; [LEAP4WA partners](#); 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, [Viral Hemorrhagic Fever Consortium](#).

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