



## Preventing Ebola Virus Disease with Ervebo Vaccination

Meamoin Kei\*

Department of Medicine, Protestant University of Congo, Congo, Africa

### DESCRIPTION

The Ebola Virus Disease (EVD) is a threat to public health, with outbreaks causing devastating consequences across affected regions. Ervebo, the first Ebola vaccine approved for human use, represents a significant breakthrough in combating this deadly virus. Its development and applications mark a crucial milestone in the global effort to prevent and control Ebola outbreaks. This explores the origins of Ervebo, its mechanisms, and its potential applications in the fight against Ebola. Ervebo developed by Merck & Co.Inc. is a recombinant, replication-competent Ebola vaccine derived from the Vesicular Stomatitis Virus (VSV). It contains a non-pathogenic form of the vesicular stomatitis virus engineered to express a surface glycoprotein of the Zaire ebolavirus species, the strain responsible for the most severe Ebola outbreaks. By incorporating this viral protein, Ervebo stimulates the immune system to produce antibodies against Ebola, providing protection against subsequent infection. The development of Ervebo is rooted in the urgent need for effective Ebola vaccines following the devastating West African Ebola epidemic of 2014-2016, which claimed thousands of lives. Accelerated efforts to develop a vaccine led to the successful clinical trials of Ervebo, demonstrating its safety and efficacy in preventing Ebola infection. In December 2019, Ervebo received regulatory approval from the European Commission and the U.S. Food and Drug Administration (FDA), marking a dangerous in the fight against Ebola.

Ervebo plays a vital role in containing and modifying Ebola outbreaks by providing rapid and targeted vaccination to at-risk populations. Its deployment in outbreak settings helps to prevent further transmission of the virus and protect healthcare workers and frontline responders. Ervebo has the potential to be integrated into preventative vaccination programs in regions

where Ebola is endemic or where there is a risk of outbreaks. By vaccinating vulnerable populations, such as healthcare workers, first responders, and communities at risk, Ervebo can help prevent the spread of Ebola and reduce the burden of the disease on affected communities. Ervebo can be employed as part of a ring vaccination strategy, wherein individuals who have been in contact with confirmed Ebola cases, as well as their close contacts, are vaccinated to make a buffer of immunity around known cases.

### CONCLUSION

Ervebo represents a groundbreaking advancement in the field of infectious disease prevention, offering hope in the fight against Ebola. Its applications extend beyond outbreak response to encompass preventative vaccination programs and innovative strategies for controlling Ebola transmission. As continue to confront emerging infectious threats, Ervebo serves as a testament to the power of scientific innovation and collaboration in safeguarding global health security. By leveraging the potential of Ervebo and other vaccines, can strive towards a world where the threat of Ebola is effectively controlled, and communities are protected from the devastating impact of this deadly virus. This targeted approach helps contain outbreaks and prevent further transmission within communities. Despite its ability, the widespread deployment of Ervebo faces logistical and operational challenges, including vaccine distribution, cold chain requirements, and community acceptance. Overcoming these challenges requires coordinated efforts from governments, international organizations, and healthcare stakeholders to ensure equitable access to vaccination and build trust within affected communities.

**Correspondence to:** Meamoin Kei, Department of Medicine, Protestant University of Congo, Congo, Africa, E-mail: meakei123@gmail.com

**Received:** 13-Feb-2024, Manuscript No. JVV-24-25354; **Editor assigned:** 15-Feb-2024, Pre QC No. JVV-24-25354 (PQ); **Reviewed:** 29-Feb-2024, QC No. JVV-24-25354; **Revised:** 07-Mar-2024, Manuscript No. JVV-24-25354 (R); **Published:** 15-Mar-2024, DOI: 10.35248/2157-7560.24.15.558.

**Citation:** Kei M (2024) Preventing Ebola Virus Disease with Ervebo Vaccination. J Vaccines Vaccin. 15:558.

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