

Recombinant Ebola Virus VP40 Protein, His-tagged

Cat. No. EBO-204 **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Ebola Virus VP40 (Zaire) is a recombinant protein expressed and purified from E. coli.
Tag	His
Background	Ebola virus is one of the deadliest viruses known to man, causing infrequent outbreaks of hemorrhagic disease with case fatality rates up to 90%. (Lehrer et al., 2019). Ebola virus particles comprise seven structural proteins of which four (nucleoprotein (NP), VP35, VP30, and the RNA-dependent RNA polymerase (L)) are components of the ribonucleoprotein complex that is responsible for viral genome replication. Glycoprotein (GP), VP40, and VP24 are membrane-associated proteins and VP24 is believed to be involved in nucleocapsid formation. VP40 (viral protein 40 kDa) is the most abundantly expressed viral protein during filoviral infection. It is a major structural protein that plays a central role in virus assembly and budding at the plasma membrane of infected cells. VP40 proteins associate with cellular membranes, interacting with the cytoplasmic tails of glycoproteins and binding to the ribonucleoprotein complex. The VP40 monomer consists of two protein domains connected by a flexible linker; the N-terminal oligomerization domain and the C-terminal membrane-binding domain. VP40 goes through intermediate states of assembly (e.g. octamers) (Silva et al., 2012) but both domains fold into beta sandwich structures of similar topology (Dessen et al., 2000). Within the N-terminal domain there are two overlapping L-domains (PTAP and PPEY, residues 7 to 13), which are required for efficient budding (Timmins et al., 2003) by interacting with specific host cellular proteins, such as

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tsg101 and vps-4 (Licata et al., 2003).

Vaccine candidates have been described containing the EBOV glycoprotein with matrix proteins VP24 and VP40 (Lehrer et al., 2019). Indeed, recombinant expression of VP40 in mammalian cells generates virus-like particles that are morphologically similar to live virus, but non-infectious. (Silva et al., 2012). These VLPs have been shown to protect mice from a challenge with a lethal dose of mouse-adapted Ebola Virus (Zaire). Antiviral therapeutics directed against the VP40 domains are also in development (Madara et al., 2015).

Formulation 25mM arginine, 0.02% sodium azide.

Applications Appropriate for use in the development of immunoassays with high specificity and sensitivity.

Notes This product is intended for research and manufacturing uses only. It is not a diagnostic device. The user assumes all responsibility for care, custody and control of the material, including its disposal, in accordance with all regulations.

Type Recombinant

ClassID 1 Infectious Disease

GENE INFORMATION

Synonyms Ebola Virus VP40 (Zaire)

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