Recombinant Ebola Virus Secreted Glycoprotein (sGP) (Bundibugyo)

Cat. No. EBO-203 **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Ebola virus secreted glycoprotein protein (sGP) is Ile 33-Arg 324 (Accession # B8XCN1), fused with a polyhistidine tag at the C-terminus, and has a calculated MW of 34.3 kDa. The protein is expressed in HEK293 cells. DTT-reduced Protein migrates as 40-55 kDa in SDS-PAGE.
Background	The virulence of EBOV may be partially attributed to the Ebola virus secreted glycoprotein (sGP), which is the main product transcribed from its GP gene. Ebola virus secreted glycoprotein is secreted from infected cells and can be readily detected in the serum of EBOV-infected hosts. Mature sGP is produced from a precursor by proteolytic cleavage by host cell proteases such as furin. sGP monomers bind to each other to form a homodimer. The role of Ebola virus secreted glycoprotein in EBOV pathogenesis is unclear, but is examined in detail by de la Vega et al (2015). EBOV envelope glycoproteins (GPs) are known to function as one of the crucial factors that determine the differential virulence across the five different EBOV species (Zaire ebolavirus, Sudan ebolavirus, Bundibugyo ebolavirus, Tai Forest ebolavirus, and Reston ebolavirus). GPs are type I transmembrane glycoproteins composed of GP1 and GP2 and all filoviruses display multiple copies of this single membrane-anchored glycoprotein (GP) projecting from their envelopes. GP is a trimer in which each monomer is a disulfide-bonded complex of a receptor binding subunit (GP1) and a fusion subunit (GP2). The Ebola virus GP has been the target of multiple neutralizing antibodies (Ab), several of which are effective in preventing the onset of disease in nonhuman primates when administered as part of a monoclonal Ab (MAb) cocktail 1 or 2 days after viral exposure (reviewed in Baseler et al., 2017).

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	Ebola virus envelope glycoprotein GP1 mucin-like region (Emuc) is a highly glycosylated region located at the apex and the sides of each glycoprotein monomer (Tran et al., 2014); it is dispensable for EBOV infections in vitro and not highly conserved. It can induce morphological change of adherent cells in vitro and causes distinct cell and tissue damage and acute inflammation in mouse muscles in vivo (Ning et al., 2018). It is believed to have various functions including influencing GP structure, enhancing viral attachment to target cell surfaces, protecting conserved regions of GP, such the receptor binding site, from antibody recognition, and masking immune regulatory molecules, such as major histocompatibility complex 1 (MHC1), on infected cell surfaces. Emuc may also have a cytotoxic function and could be involved in binding to human CLEC10A. It was reported to be essential to the infectivity of ZEBOV (Yang et al., 2000). As such, neutralizing antibodies are often directed against Emuc for potential therapeutic use.
Purity	>90% by SDS-PAGE
Formulation	DPBS pH 7.4
Freezing	Can be frozen, but avoid multiple freeze/thaw cycles.
Storage	Store lyophilised product at 4 centigrade for short term, or frozen at -20 centigrade - -80 centigrade for long term. Product is shipped at ambient temperature
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

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GENE INFORMATION

Synonyms	Ebola Virus Secreted Glycoprotein (sGP) (Bundibugyo)

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