

PRODUCT INFORMATION

Ebola Virus Envelope Glycoprotein GP1 Subunit (subtype Bundibugyo, strain Uganda 2007) (recombinant)

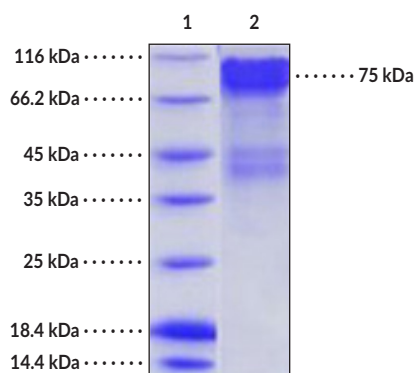
Item No. 41066

Overview and Properties

Synonyms:	EBOV Envelope Glycoprotein GP1 Subunit, EBOV-GP1
Source:	Recombinant Ebola virus (subtype Bundibugyo, strain Uganda 2007) C-Terminal His-tagged envelope glycoprotein GP1 subunit expressed in insect cells
Amino Acids:	33-501
Uniprot No.:	B8XCNO
Molecular Weight:	53.5 kDa
Storage:	-80°C (as supplied)
Stability:	≥1 year
Purity:	≥95% estimated by SDS-PAGE
Supplied in:	Lyophilized from sterile 20 mM Tris, with 500 mM sodium chloride, and 10% glycerol, pH 7.4
Endotoxin Testing:	<1.0 EU/μg determined by the LAL endotoxin assay
Bioactivity:	See figure for details

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Image



Lane 1: MW Markers

Lane 2: Ebola Virus Envelope Glycoprotein GP1 Subunit (subtype Bundibugyo, strain Uganda 2007)

SDS-PAGE Analysis of Ebola Virus Envelope Glycoprotein GP1 Subunit (subtype Bundibugyo, strain Uganda 2007). This protein has a calculated molecular weight of 53.5 kDa. It has an apparent molecular weight of approximately 75 kDa by SDS-PAGE under reducing conditions due to glycosylation.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
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Description

Ebola virus (EBOV) is an enveloped and negative-stranded RNA virus, a member of the *Ebolavirus* genus, and the causative agent of Ebola virus disease (EVD), a condition characterized by a hemorrhagic fever and a high mortality rate, that is endemic to western and equatorial Africa.¹ The single-stranded RNA genome of EBOV encodes seven proteins: nucleoprotein (NP), virion protein 40 (VP40), VP35, VP30, VP24, glycoprotein (GP), and an RNA-dependent RNA polymerase (L).^{1,2} EBOV envelope GP is a class I fusion protein involved in viral attachment and entry to host cells.³ It is composed of two subunits, GP1 and GP2, which are separated by a furin cleavage site and linked *via* disulfide bonds to form trimers of heterodimers with a chalice and cradle-like structure.³⁻⁵ EBOV GP is covered with N- and O-linked glycans, and the GP1 subunit is composed of a signal peptide, base, and head domains, a glycan cap, which shields the receptor-binding site, and a mucin-like domain, which is heavily glycosylated with O-linked glycans.^{3,4} The GP1 subunit is involved in host cell attachment, and cleavage of the glycan cap and mucin-like domain by host cathepsin B, with cathepsin L in an accessory role, is required for binding to the host cell.^{3,6} Once fused, the EBOV virion enters the cell *via* macropinocytosis and is transported to the endosome. The glycosylation of the glycan cap and dense glycosylation of the GP1 mucin-like domain shield surface epitopes and prevent neutralizing antibodies from interacting with regions required for host cell binding, fusion, and entry.^{5,7} Cayman's Ebola Virus Envelope Glycoprotein GP1 Subunit (subtype Bundibugyo, strain Uganda 2007) (recombinant) protein consists of 480 amino acids, has a calculated molecular weight of 53.5 kDa, and a predicted N-terminus of Ile33 after signal peptide cleavage. By SDS-PAGE, under reducing conditions (if applicable), the apparent molecular mass of the protein is approximately 75 kDa due to glycosylation.

References

1. Rojas, M., Monsalve, D.M., Pacheco, Y., *et al.* Ebola virus disease: An emerging and re-emerging viral threat. *J. Autoimmun.* **106**, 102375 (2020).
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7. Iraqi, M., Edri, A., Greenshpan, Y., *et al.* N-glycans mediate the Ebola virus-GP1 shielding of ligands to immune receptors and immune evasion. *Front. Cell. Infect. Microbiol.* **10**, 48 (2020).

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