Ebola virus EBOV (Subtype Sudan, strain Gulu) Glycoprotein / GP1 (mucin domain deleted) Protein (aa:Met1-Asp320, His Tag)

Catalog Number: 40094-V08H

Sino Biological
Biological Solution Specialist

General Information

Gene Name Synonym:

EBOV-G

Protein Construction:

A DNA sequence encoding Sudan ebola virus (strain Uganda-00) GP (Q7T9D9) (Met1-Asp320) was expressed with a C-terminal polyhistidine tag.

Source: EBOV

Expression Host: HEK293 Cells

QC Testing

Purity: > 95 % as determined by SDS-PAGE

Endotoxin:

< 1.0 EU per μg of the protein as determined by the LAL method

Stability:

Samples are stable for up to twelve months from date of receipt at -70 ℃

Predicted N terminal: Met 33

Molecular Mass:

The recombinant Sudan ebola virus (strain Uganda-00) GP comprises 299 amino acids and has a predicted molecular mass of 33.8 kDa. The apparent molecular mass of the protein is approximately 46-64 kDa in SDS-PAGE under reducing conditions.

Formulation:

Lyophilized from sterile PBS, pH 7.4.

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

Usage Guide

Storage:

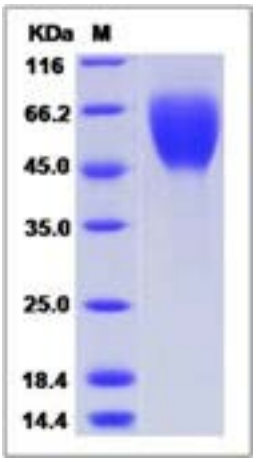
Store it under sterile conditions at -20℃ to -80℃ upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:



Protein Description

The fourth gene of the EBOV genome encodes a 160-kDa envelope-attached glycoprotein (GP) and a 110 kDa secreted glycoprotein (sGP). Both GP and sGP have an identical 295-residue N-terminus, however, they have different C-terminal sequences. Recently, great attention has been paid to GP for vaccines design and entry inhibitors isolation. GP is a class I fusion protein which assembles as trimers on viral surface and plays an important role in virus entry and attachment. Mature GP is a disulfide-linked heterodimer formed by two subunits, GP1 and GP2, which are generated from the proteolytical process of GP precursor (pre-GP) by cellular furin during virus assembly . The GP1 subunit contains a mucin domain and a receptor-binding domain (RBD); the GP2 subunit has a fusion peptide, a helical heptad-repeat (HR) region, a transmembrane (TM) domain, and a 4-residue cytoplasmic tail. The RBD of GP1 mediates the interaction of EBOV with cellular receptor (e.g. DC-SIGN/LSIGN, TIM-1, hMGL, NPC1, β-integrins, folate receptor-α, and Tyro3 family receptors), of which TIM1 and NPC1 are essential for EBOV entry; the mucin domain having N- and O-linked glycans enhances the viral attachment to cellular hMGL, and participates in shielding key neutralization epitopes, which helps the virus evades immune elimination. There are large conformation changes of GP2 during membrane fusion, which enhance the insertion of fusion loop into cellular membrane and facilitate the release of viral nucleocapsid core to cytoplasm.

References

1.Volchkov VE, et al. Processing of the Ebola virus glycoprotein by the proprotein convertase furin. Proc Natl Acad Sci U S A. 1998 May 12;95(10):5762-7. 2. Lee JE, et al. Structure of the Ebola virus glycoprotein bound to an antibody from a human survivor. Nature. 2008 Jul 10;454(7201):177-82. doi: 10.1038/nature07082. 3.Hood CL, et al. Biochemical and structural characterization of cathepsin L-processed Ebola virus glycoprotein: implications for viral entry and immunogenicity. J Virol. 2010 Mar;84(6):2972-82. doi: 10.1128/JVI.02151-09.