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PRODUCT INFORMATION

Influenza A H5N1 HA1 + HA2 (strain A/barn swallow/Hong Kong/D10-1161/2010) (cleavage site mutant; recombinant)

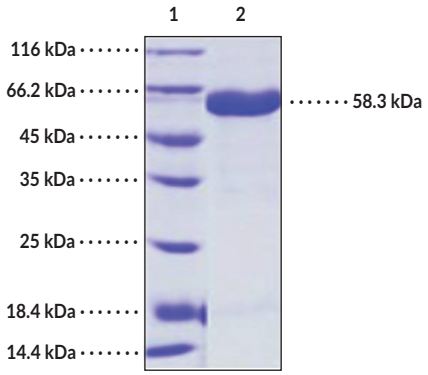
Item No. 42016

Overview and Properties

Synonym:	Influenza A H5N1 Hemagglutinin 1 + 2
Source:	Active recombinant influenza A H5N1 C-terminal His-tagged HA1 + HA2 expressed in insect cells
Amino Acids:	17-531
Uniprot No.:	L7S370
Molecular Weight:	59.8 kDa
Storage:	-80°C (as supplied)
Stability:	≥1 year
Purity:	≥95% estimated by SDS-PAGE
Supplied in:	Lyophilized from sterile 20 mM Tris, 500 mM sodium chloride, with 10% glycerol, pH 7.4.
Endotoxin Testing:	<1.0 EU/µg, determined by the LAL endotoxin assay
Protein Concentration:	***batch specific*** mg/ml
Activity:	***batch specific*** U/ml
Specific Activity:	***batch specific*** U/mg

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

Image



Lane 1: MW Markers
Lane 2: Influenza A H5N1 HA1+ HA2 (strain A/barn swallow/Hong Kong/D10-1161/2010) (cleavage site mutant; recombinant)

SDS-PAGE Analysis of Influenza A H5N1 HA1+ HA2 (strain A/barn swallow/Hong Kong/D10-1161/2010) (cleavage site mutant; recombinant). This protein has a calculated molecular weight of 59.8 kDa. It has an apparent molecular weight of approximately 58.3 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
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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PRODUCT INFORMATION

Description

Influenza A H5N1 HA is a type I membrane glycoprotein involved in receptor binding and virus-host cell fusion.[1-3] It is produced as a precursor protein, HA0, which is composed of a stalk and head domain and forms homotrimers on the viral surface.[1,4] The HA0 precursor is cleaved into subunits, HA1 and HA2, which are responsible for host cell surface receptor binding and endosomal membrane fusion, respectively, and this cleavage is required for endosomal fusion.[1] For influenza A and influenza B, which are low pathogenic influenza viruses, cleavage occurs *via* trypsin-like proteases, such as transmembrane serine protease 2 (TMPRSS2), which is essential for influenza A HA, but not influenza B HA, cleavage.[5-7] Cleaved influenza A H1N1 HA binds to terminal α2,6- or α2,3-sialic acids on glycoproteins or glycolipids on the host cell surface via the receptor-binding domain in the HA1 subunit, which triggers endocytosis of the virus and trafficking of the vesicle into the endosome.[4,8,9] The low pH environment of the endosome triggers viral rearrangement into a prefusion conformation, and the HA2 subunit facilitates fusion with the endosomal membrane to release viral ribonucleoproteins into the cytosol where they are relocated to the nucleus for viral replication.[4] A monoclonal antibody targeting a highly conserved epitope of influenza A H5N1 HA1 induces neutralization of influenza A H5N1 pseudoviruses *in vitro* and prevents mortality in a mouse model of lethal influenza A H5N1 infection.[10] Cayman's Influenza A H5N1 HA1 + HA2 (strain A/barn swallow/Hong Kong/D10-1161/2010) (cleavage site mutant; recombinant) consists of 524 amino acids, has a calculated molecular weight of 59.8 kDa, a predicted N-terminus of Asp17 after signal peptide cleavage, and contains a TET mutation at the HA1 and HA2 RRRRK cleavage site resulting in an uncleaved HA1 + HA2 construct. By SDS-PAGE, under reducing conditions, the apparent molecular mass of the protein is 58.3 kDa.

References

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