

Influenza A H5N1 (A/VietNam/1203/2004) Hemagglutinin/HA Protein (His & Fc)

General Information

Synonyms:	Harvey rat sarcoma viral oncogene homolog
Protein Construction:	A DNA sequence encoding the extracellular domain of hemagglutinin (Influenza A virus (A/Viet Nam/1203/2004 (H5N1)) (AAW80717.1) (Met 1-Gln 531) with cleavage site mutated (RERRRKKR→TETR,HA1+HA2,uncleaved) was fused with the C-terminal Fc region of mouse IgG1 followed by a polyhistidine tag. Predicted N terminal: Asp 17
Species:	H5N1
Expression Host:	HEK293 Cells
Accession:	Q5EP31
Molecular Weight:	85.7 kDa (predicted); 110-120 kDa (reducing condition, due to glycosylation)

QC Testing

Biological Activity:	Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 90 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing 100 mM NaAc, 10 mM NaCl, 200 mM Tris, pH 7.5. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:	Reconstituted with sterile deionized water to 0.2 mg/mL. Reconstitution conditions may vary depending on the lot.
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Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

The influenza viral Hemagglutinin (HA) protein is a homotrimer with a receptor binding pocket on the globular head of each monomer. HA has at least 18 different antigens. These subtypes are named H1 through H18. HA has two functions. Firstly, it allows the recognition of target vertebrate cells, accomplished through the binding to

these cells' sialic acid-containing receptors. Secondly, once bound it facilitates the entry of the viral genome into the target cells by causing the fusion of the host endosomal membrane with the viral membrane. The influenza virus Hemagglutinin (HA) protein is translated in cells as a single protein, HA, or hemagglutinin precursor protein. For viral activation, hemagglutinin precursor protein (HA) must be cleaved by a trypsin-like serine endoprotease at a specific site, normally coded for by a single basic amino acid (usually arginine) between the HA1 and HA2 domains of the protein. After cleavage, the two disulfide-bonded protein domains produce the mature form of the protein subunits as a prerequisite for the conformational change necessary for fusion and hence viral infectivity.

Reference

White JM, Hoffman LR, Arevalo JH, et al. Attachment and entry of influenza virus into host cells. Pivotal roles of hemagglutinin. In Chiu W, Burnett RM, Garcea RL. Structural Biology of Viruses. 1997 Suzuki Y. Sialobiology of influenza: molecular mechanism of host range variation of influenza viruses. Biol. Pharm. Bull. 2005.

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