Data Sheet (Cat.No.TMPY-04091)

TargetMol

Influenza A H7N9 (A/Shanghai/2/2013) Hemagglutinin/HA Protein (His)

General Information

Synonyms: Harvey rat sarcoma viral oncogene homolog

Protein Construction: A DNA sequence encoding the Influenza A virus (A/Shanghai/2/2013(H7N9)) hemagglutinin (translated amino acid of EPI439502) (Met1-Val524) was expressed with a C-terminal polyhistidine tag. Predicted N terminal: Asp 19

Species: H7N9

Expression Host: Baculovirus Insect Cells

Molecular Weight: 57.6 kDa (predicted); 58 kDa (reducing conditions)

QC Testing

Biological Activity:
1. Measured by its ability to agglutinate guinea pig red blood cells. HA titer is 0.3-3 μg/mL for 1% GRBC.
2. Measured by its ability to bind with Neu5Aca2-3Galb1-4GlcNAcb-PAA-biotin (01-077) using the Octet RED System.
3. Measured by its ability to bind with Neu5Aca2-6GalNAca-PAA-biotin (01-059) using the Octet RED System.

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 20 mM Tris, 500 mM NaCl, 10% glycerol, pH 7.4. 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:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

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.

Shipping:

In general, Lyophilized powders are shipping with blue 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

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Senne DA, Panigrahy B, Kawaoka Y, et al. Survey of the hemagglutinin (HA) cleavage site sequence of H5 and H7 avian influenza viruses: amino acid sequence at the HA cleavage site as a marker of pathogenicity potential. Avian Dis. 1996Donald J. Benton,Influenza hemagglutinin membrane anchor,PNAS,2018

Tel:781-999-4286 E_mail:info@targetmol.com Address:34 Washington Street,Wellesley Hills,MA 02481