MERS Spike protein trimer (R748A, R751A, V1060P, L1061P), His Tag (MALS verified)

Catalog # SPN-M52H5

Synonym

Spike,S protein,Spike glycoprotein,S glycoprotein

Source

MERS Spike protein trimer (R748A, R751A, V1060P, L1061P), His Tag (SPN-M52H5) is expressed from human 293 cells (HEK293). It contains AA Tyr 18 - Trp 1295 (Accession # K0BRG7 (R748A, R751A, V1060P, L1061P)). The recombinant protein has a T4 fibritin trimerization motif. Proline substitutions (V1060P, L1061P) and alanine substitutions (R748A, R751A) are introduced to stabilize the trimeric prefusion state of MERS-CoV Spike protein and abolish the furin cleavage site, respectively.
Predicted N-terminus: Tyr 18

Molecular Characterization

This protein carries a polyhistidine tag at the C-terminus.

The protein has a calculated MW of 145.9 kDa. The protein migrates as 150 kDa and 175-200 kDa under reducing (R) condition (SDS-PAGE) due to glycosylation.

Endotoxin

Less than 1.0 EU per μg by the LAL method.

Purity

>90% as determined by SDS-PAGE.

>90% as determined by SEC-MALS.

Formulation

Lyophilized from 0.22 μm filtered solution in PBS with trehalose as protectant.

Contact us for customized product form or formulation.

Reconstitution

Please see Certificate of Analysis for specific instructions.

For best performance, we strongly recommend you to follow the reconstitution protocol provided in the CoA.

Storage

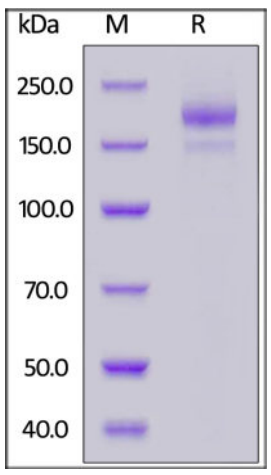
For long term storage, the product should be stored at lyophilized state at -20°C or lower.

Please avoid repeated freeze-thaw cycles.

This product is stable after storage at:

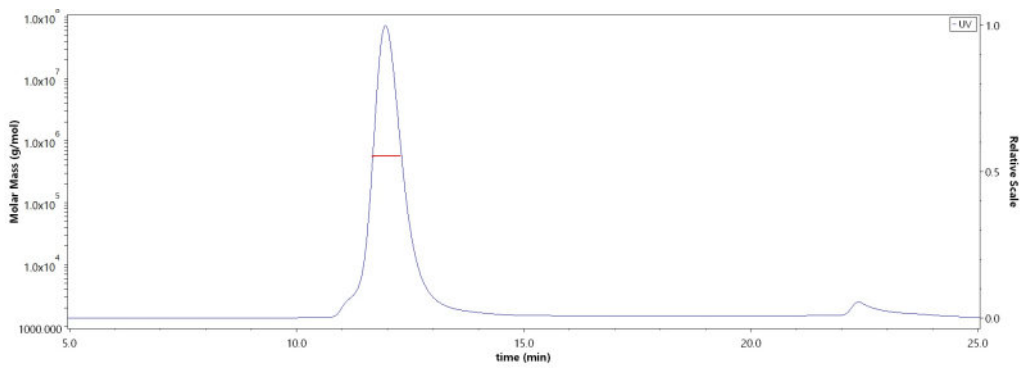
- -20°C to -70°C for 12 months in lyophilized state;
- -70°C for 3 months under sterile conditions after reconstitution.

SDS-PAGE



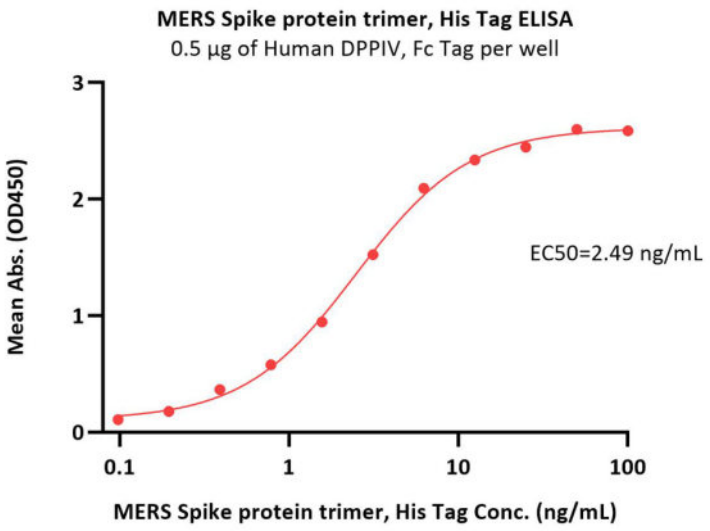
MERS Spike protein trimer (R748A, R751A, V1060P, L1061P), His Tag on SDS-PAGE under reducing (R) condition. The gel was stained with Coomassie Blue. The purity of the protein is greater than 90%.

SEC-MALS

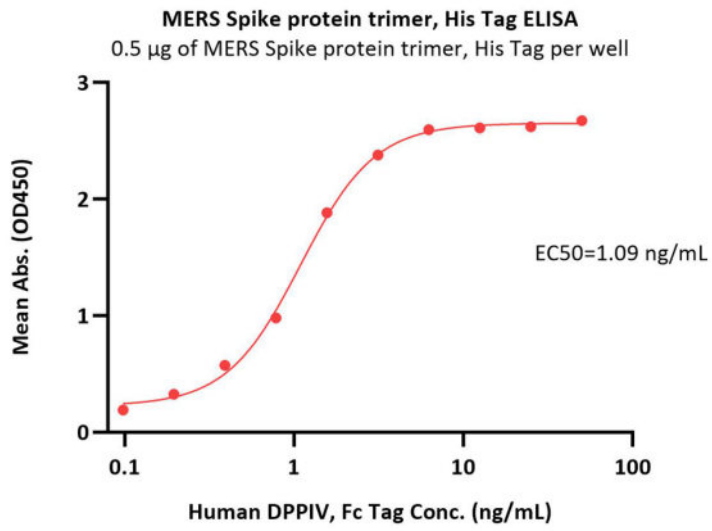


The purity of MERS Spike protein trimer (R748A, R751A, V1060P, L1061P), His Tag (Cat. No. SPN-M52H5) is more than 90% and the molecular weight of this protein is around 540-580 kDa verified by SEC-MALS.
Report

Bioactivity-ELISA



Immobilized Human DPPIV, Fc Tag (Cat. No. DP4-H5266) at 5 μg/mL (100 μL/well) can bind MERS Spike protein trimer, His Tag (Cat. No. SPN-M52H5) with a linear range of 0.1-3 ng/mL (QC tested).



Immobilized MERS Spike protein trimer, His Tag (Cat. No. SPN-M52H5) at 5 μg/mL (100 μL/well) can bind Human DPPIV, Fc Tag (Cat. No. DP4-H5266) with a linear range of 0.1-2 ng/mL (Routinely tested).

Background

The MERS or Middle East Respiratory Syndrome Coronavirus, is a member of the coronavirus family and is known to cause severe respiratory illness in humans. The MERS protein is a type I transmembrane protein that plays a vital role in the virus's ability to infect host cells. It is composed of three main domains: the extracellular domain, the transmembrane domain, and the cytoplasmic domain. The extracellular domain, further divided into S1 and S2 subunits, is responsible for receptor recognition and binding. The S1 subunit contains the Receptor Binding Domain (RBD), which is crucial for the virus's attachment to and entry into host cells. The RBD specifically interacts with the host cell receptor, facilitating the initial step of infection. The S2 subunit, on the other hand, is responsible for membrane fusion. It contains a fusion peptide that inserts into the host cell membrane, initiating the fusion process. This fusion allows the virus's genetic material to be released into the host cell, initiating the infection process.

Clinical and Translational Updates