

SARS-CoV-2 S protein, His Tag, Super stable trimer (MALS & NS-EM verified)

Catalog#KS-C52H9

Background

It's been reported that Coronavirus can infect the human respiratory epithelial cells through interaction with the human ACE2 receptor. The spike protein is a large type I transmembrane protein containing two subunits, S1 and S2. S1 mainly contains a receptor binding domain (RBD), which is responsible for recognizing the cell surface receptor. S2 contains basic elements needed for the membrane fusion. The S protein plays key parts in the induction of neutralizing-antibody and T-cell responses, as well as protective immunity.

Synonym

Spike, S protein, Spike glycoprotein, S glycoprotein

Source

SARS-CoV-2 S protein, His Tag, Super stable trimer (SPN-C52H9) is the ectodomain of SARS-CoV-2 S protein which contains AA Val 16 - Pro 1213 (Accession # QHD43416.1). The recombinant protein is expressed from human 293 cells (HEK293) with T4 fibrin trimerization motif and a polyhistidine tag at the C-terminus. Proline substitutions (F817P, A892P, A899P, A942P, K986P, V987P) and alanine substitutions (R683A and R685A) are introduced to stabilize the trimeric prefusion state of SARS-CoV-2 S protein and abolish the furin cleavage site, respectively.

Predicted N-terminus: Val 16

Endotoxin

Less than 1.0 EU per µg by the LAL method.

Purity

>95% as determined by SDS-PAGE.

>90% as determined by SEC-MALS.

Formulation

Lyophilized from 0.22 µm filtered solution in PBS. Normally trehalose is added as protectant before lyophilization.

Storage

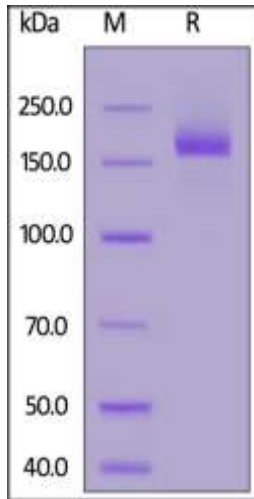
For long term storage, the product should be stored at lyophilized state at -20°C or lower. Please avoid repeated freeze-thaw cycles.

This product is stable after storage at:

-20°C to -70°C for 12 months in lyophilized state;

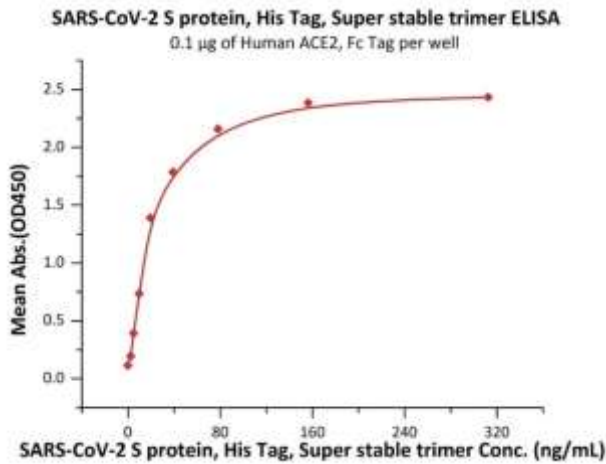
-70°C for 3 months under sterile conditions after reconstitution.

SDS-PAGE



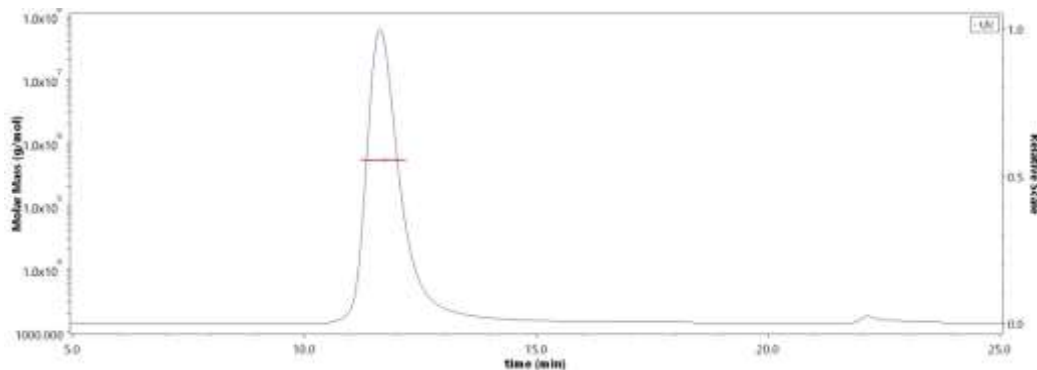
SARS-CoV-2 S protein, His Tag, Super stable trimer on SDS-PAGE under reducing (R) condition. The gel was stained overnight with Coomassie Blue. The purity of the protein is greater than 95%.

Bioactivity-ELISA

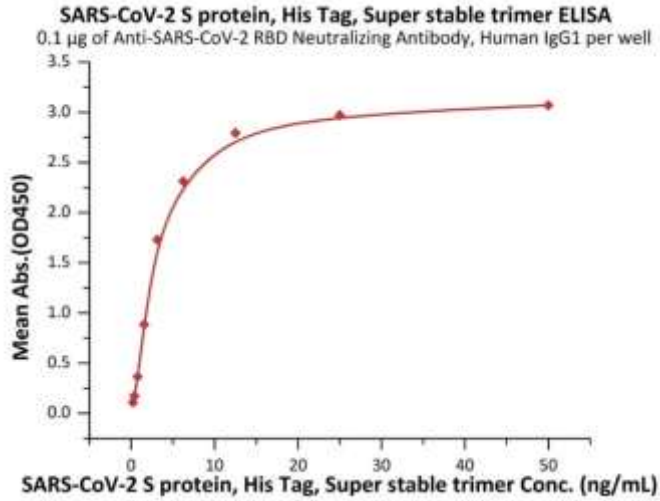


Immobilized Human ACE2, Fc Tag at 1 µg/mL (100 µL/well) can bind SARS-CoV-2 S protein, His Tag, Super stable trimer with a linear range of 1-39 ng/mL (QC tested).

SEC-MALS

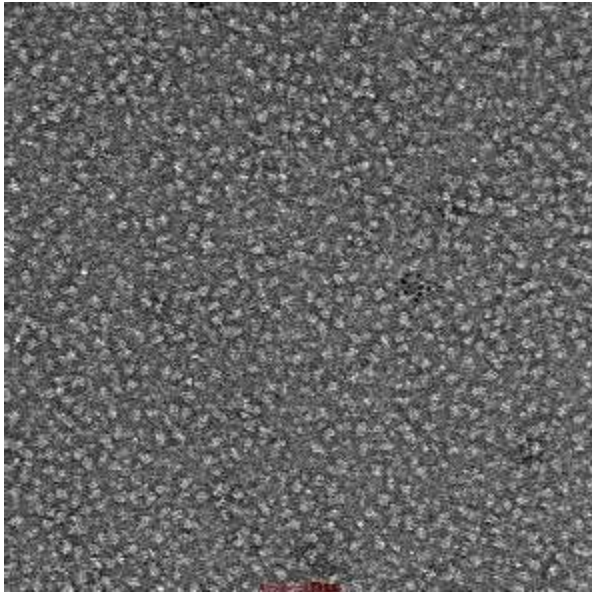


The purity of SARS-CoV-2 S protein, His Tag, Super stable trimer was more than 90% and the molecular weight of this protein is around 480-550 kDa verified by SEC-MALS.



Immobilized Anti-SARS-CoV-2 RBD Neutralizing Antibody, Human IgG1 at 1 µg/mL (100 µL/well) can bind SARS-CoV-2 S protein, His Tag, Super stable trimer with a linear range of 0.2-3 ng/mL (Routinely tested).

Negative Staining Electron Microscopy



The well-folded trimeric particles of SARS-CoV-2 S protein, His Tag, Super stable trimer was verified by negative stain electron micrography. The particles are similar in size and appearance to SARS-CoV-2 trimers reported in published literature.