

## **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**

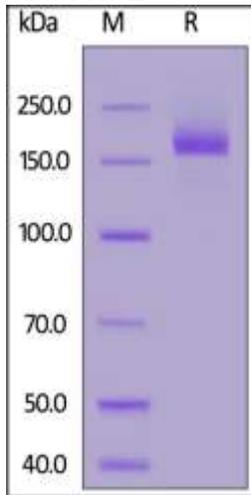
For long term storage, the product should be stored at lyophilized state at -20°C or lower. Please avoid repeated freeze-thaw cycles.

This product is stable after storage at:

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

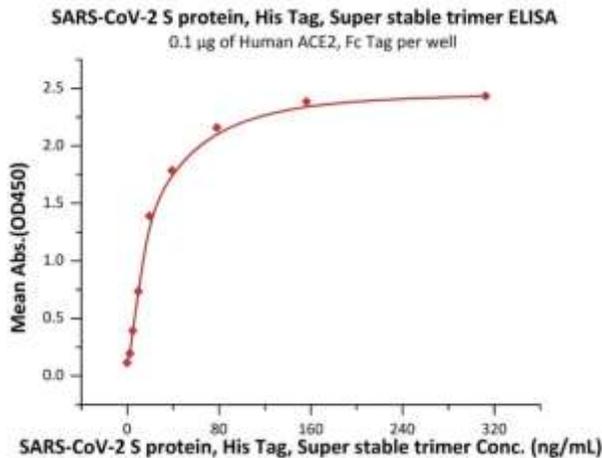
-70°C for 3 months under sterile conditions after reconstitution.

## SDS-PAGE



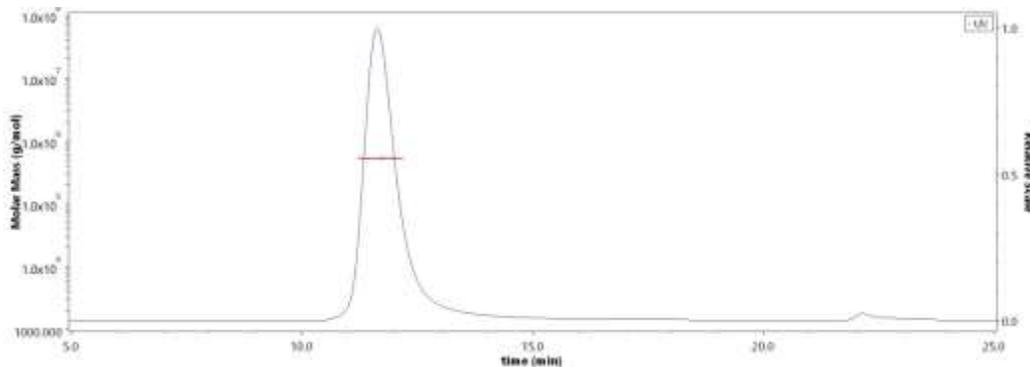
SARS-CoV-2 S protein, His Tag, Super stable trimer on SDS-PAGE under reducing (R) condition. The gel was stained overnight with Coomassie Blue. The purity of the protein is greater than 95%.

## Bioactivity-ELISA

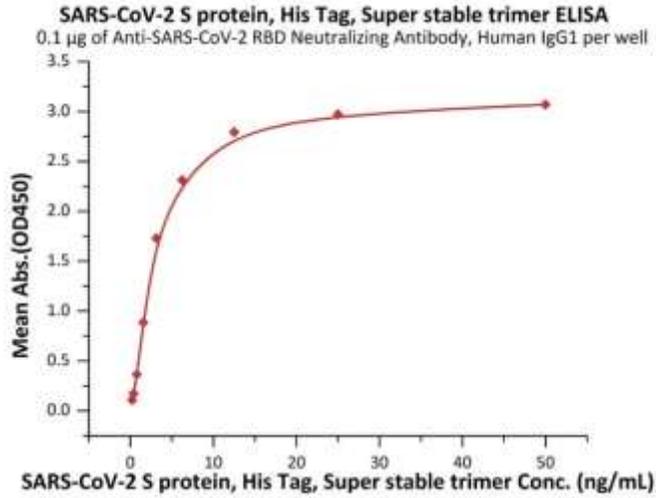


Immobilized Human ACE2, Fc Tag at 1 µg/mL (100 µL/well) can bind SARS-CoV-2 S protein, His Tag, Super stable trimer with a linear range of 1-39 ng/mL (QC tested).

## SEC-MALS

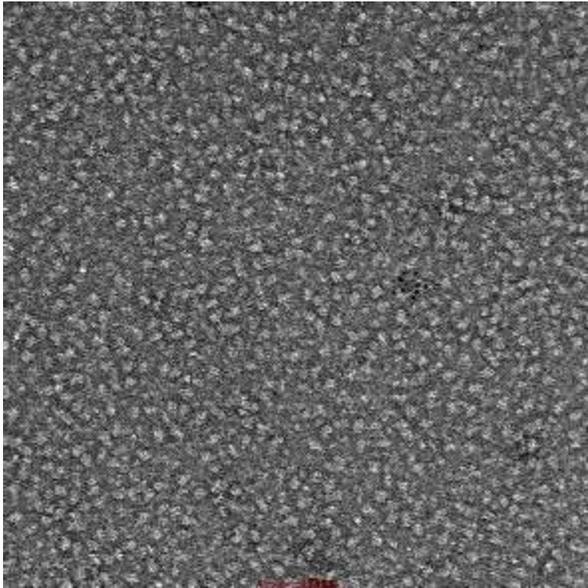


The purity of SARS-CoV-2 S protein, His Tag, Super stable trimer was more than 90% and the molecular weight of this protein is around 480-550 kDa verified by SEC-MALS.



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.