

**Synonym**

Spike,S protein,Spike glycoprotein,S glycoprotein

**Source**

SARS-CoV-2 S protein, His Tag (SPN-C52Hd) is expressed from human 293 cells (HEK293). It contains AA Val 16 - Pro 1213 (Accession # [QHD43416.1](#)). Proline substitutions (F817P, A892P, A899P, A942P, K986P, V987P) are introduced to stabilize the trimeric prefusion state of SARS-CoV-2 S protein. Predicted N-terminus: Val 16

**Molecular Characterization**

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

The protein has a calculated MW of 138.2 kDa. The protein is cleaved at furin site and divided into S1 (16-685) and S2 (686-1213). The protein migrates as 75-85 kDa, 90-100 kDa and 150-160 kDa under reducing (R) condition (SDS-PAGE) due to glycosylation.

**Endotoxin**

Less than 1.0 EU per  $\mu\text{g}$  by the LAL method.

**Purity**

>95% as determined by SDS-PAGE.

**Formulation**

Lyophilized from 0.22  $\mu\text{m}$  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.*

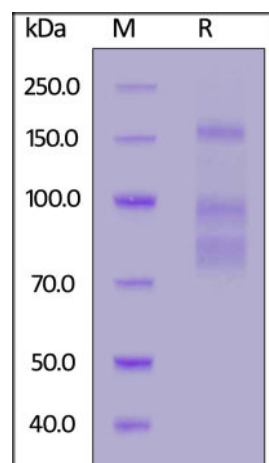
**Storage**

For long term storage, the product should be stored at lyophilized state at  $-20^{\circ}\text{C}$  or lower.

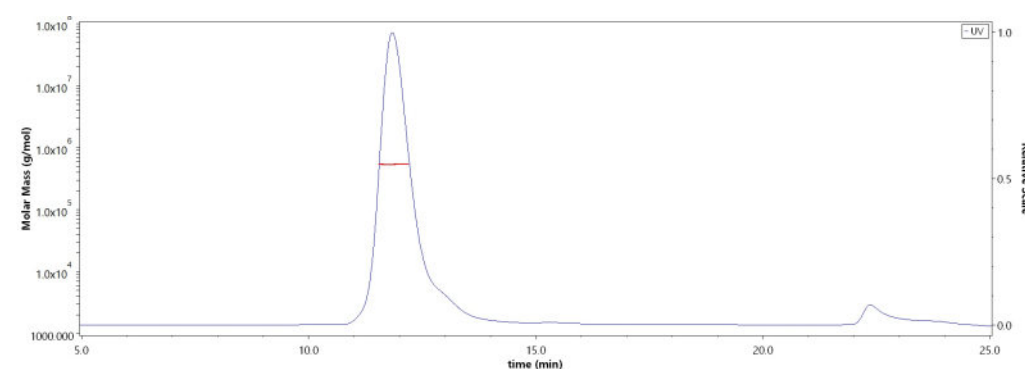
*Please avoid repeated freeze-thaw cycles.*

This product is stable after storage at:

- $-20^{\circ}\text{C}$  to  $-70^{\circ}\text{C}$  for 12 months in lyophilized state;
- $-70^{\circ}\text{C}$  for 3 months under sterile conditions after reconstitution.

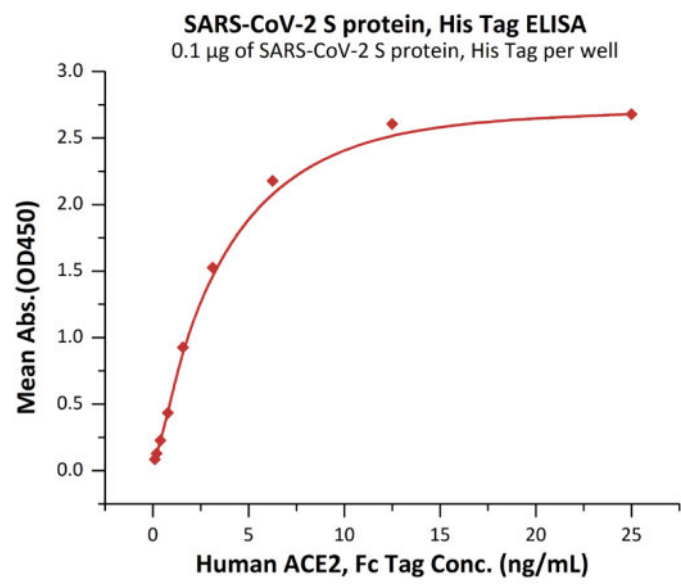
**SDS-PAGE**

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

**Bioactivity-ELISA****SEC-MALS**

The purity of SARS-CoV-2 S protein, His Tag (Cat. No. SPN-C52Hd) is more than 85% and the molecular weight of this protein is around 530-700 kDa verified by SEC-MALS.

[Report](#)



Immobilized SARS-CoV-2 S protein, His Tag (Cat. No. SPN-C52Hd) at 1 µg/mL (100 µL/well) can bind Human ACE2, Fc Tag (Cat. No. AC2-H5257) with a linear range of 0.1-3 ng/mL (QC tested).

## Background

It's been reported that SARS-CoV-2 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.

## Clinical and Translational Updates

Please contact us via [TechSupport@acrobiosystems.com](mailto:TechSupport@acrobiosystems.com) if you have any question on this product.