

**Synonym**

Spike,S protein,Spike glycoprotein,S glycoprotein,COVID-19

**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

**Molecular Characterization**

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

The protein has a calculated MW of 138.0 kDa. The protein migrates as 150-200 kDa under reducing (R) condition (SDS-PAGE) due to glycosylation.

**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.

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.*

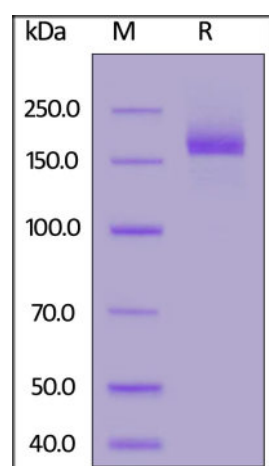
**Storage**

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

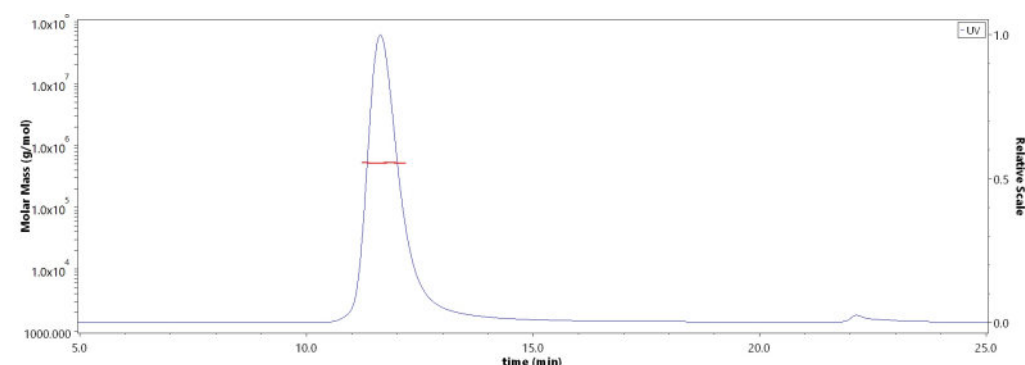
*Please avoid repeated freeze-thaw cycles.*

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**

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****SEC-MALS**

The purity of SARS-CoV-2 S protein, His Tag, Super stable trimer (Cat. No. AMS.SPN-C52H9) was more than 90% and the molecular weight of this protein is around 480-550 kDa verified by SEC-MALS.

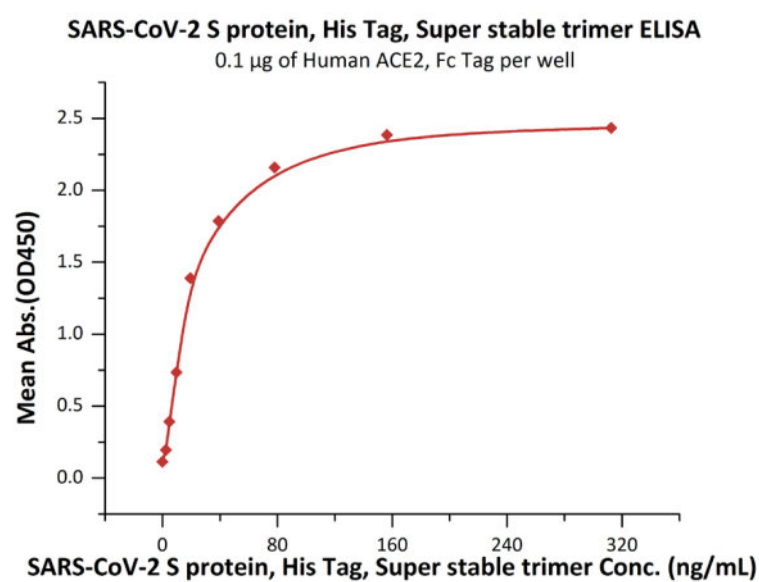
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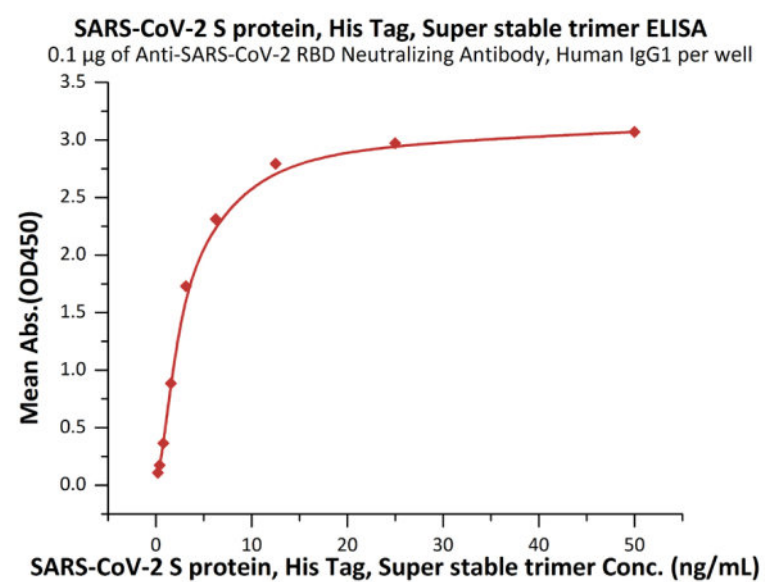
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Immobilized Human ACE2, Fc Tag (Cat. No. AMS.AC2-H5257) at 1 µg/mL (100µL/well) can bind SARS-CoV-2 S protein, His Tag, Super stable trimer (Cat.No. AMS.SPN-C52H9) with a linear range of 1-39 ng/mL (QC tested).



Immobilized Anti-SARS-CoV-2 RBD Neutralizing Antibody, Human IgG1 (Cat. No. AMS.SAD-S35) at 1 µg/mL (100 µL/well) can bind SARS-CoV-2 S protein, His Tag, Super stable trimer (Cat. No. AMS.SPN-C52) with a linear range of 0.2-3 ng/mL (Routinely tested).

## 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.

## References

- (1) [Wan Y, et al. J Virol. 2020. pii: JVI.00127-20.](#)
- (2) [Benvenuto D, et al. J Med Virol. 2020.](#)
- (3) [Chang CY, et al. AMB Express. 2020. 10\(1\):20.](#)

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

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