

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

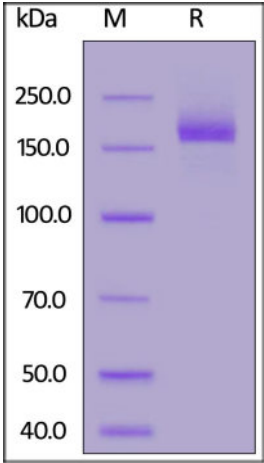
Please see Certificate of Analysis for specific instructions.

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

Storage

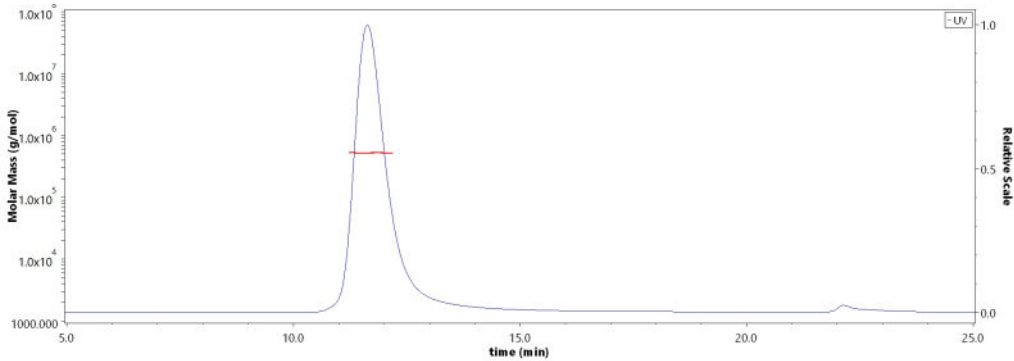
- For long term storage, the product should be stored at lyophilized state at -20°C or lower.
- Please avoid repeated freeze-thaw cycles.*
- This product is stable after storage at:
- 20°C to -70°C for 12 months in lyophilized state;
 - 70°C for 3 months under sterile conditions after reconstitution.

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%.

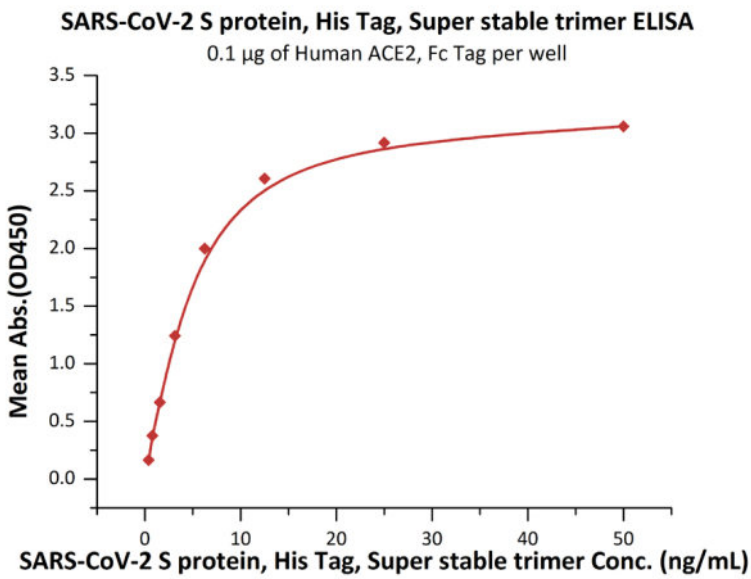
SEC-MALS



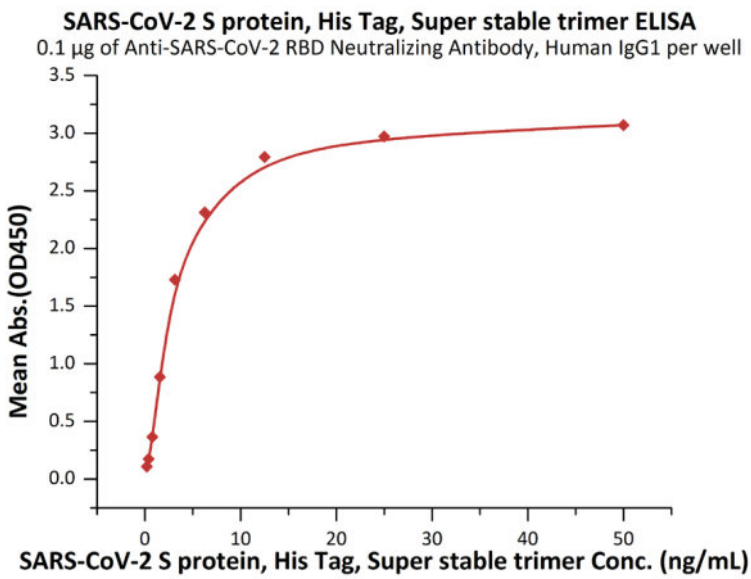
The purity of SARS-CoV-2 S protein, His Tag, Super stable trimer (Cat. No. SPN-C52H9) was more than 90% and the molecular weight of this protein is around 480-550 kDa verified by SEC-MALS.

[Report](#)

Bioactivity-ELISA



Immobilized Human ACE2, Fc Tag (Cat. No. [AC2-H5257](#)) at 1 µg/mL (100 µL/well) can bind SARS-CoV-2 S protein, His Tag, Super stable trimer (Cat. No. [SPN-C52H9](#)) with a linear range of 0.4-6 ng/mL (QC tested).



Immobilized Anti-SARS-CoV-2 RBD Neutralizing Antibody, Human IgG1 (Cat. No. [SAD-S35](#)) at 1 µg/mL (100 µL/well) can bind SARS-CoV-2 S protein, His Tag, Super stable trimer (Cat. No. [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 TechSupport@acrobiosystems.com if you have any question on this product.