

Synonym

Spike,S1 protein,Spike glycoprotein Subunit1,S glycoprotein Subunit1,Spike protein S1,COVID-19

Source

SARS-CoV-2 S1 protein, His Tag (S1N-C52H3) is expressed from human 293 cells (HEK293). It contains AA Val 16 - Arg 685 (Accession # [QHD43416.1](#)). Predicted N-terminus: Val 16

Molecular Characterization

S1 protein(Val 16 - Arg 685)  
QHD43416.1

Poly-his

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

The protein has a calculated MW of 76.9 kDa. The protein migrates as 100-140 kDa under reducing (R) condition (SDS-PAGE) due to glycosylation.

Endotoxin

Less than 1.0 EU per µg by the LAL method.

Purity

>90% as determined by SDS-PAGE.

Formulation

Lyophilized from 0.22 µm filtered solution in PBS, pH7.4. 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.*

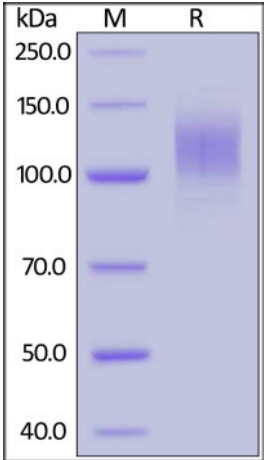
Storage

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

*Please avoid repeated freeze-thaw cycles.*

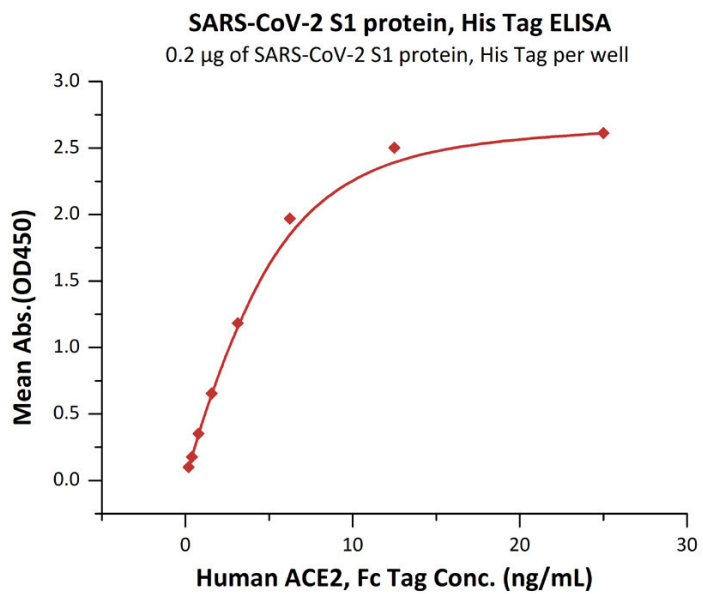
- This product is stable after storage at:
- 20°C to -70°C for 12 months in lyophilized state;
  - 70°C for 3 months under sterile conditions after reconstitution.

SDS-PAGE

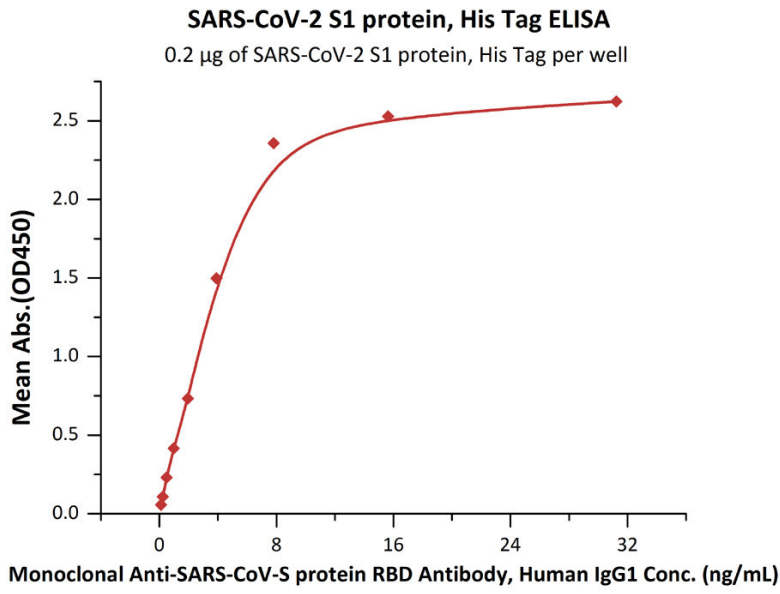


SARS-CoV-2 S1 protein, His Tag on SDS-PAGE under reducing (R) condition. The gel was stained overnight with Coomassie Blue. The purity of the protein is greater than 90%.

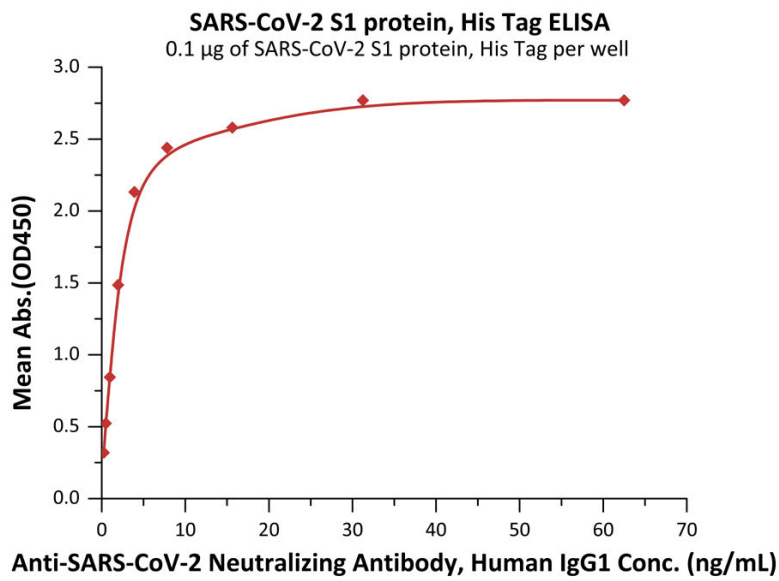
Bioactivity-ELISA



Immobilized SARS-CoV-2 S1 protein, His Tag (Cat. No. [S1N-C52H3](#)) at 2 µg/mL (100 µL/well) can bind Human ACE2, Fc Tag (Cat. No. [AC2-H5257](#)) with a linear range of 0.2-6 ng/mL (QC tested).

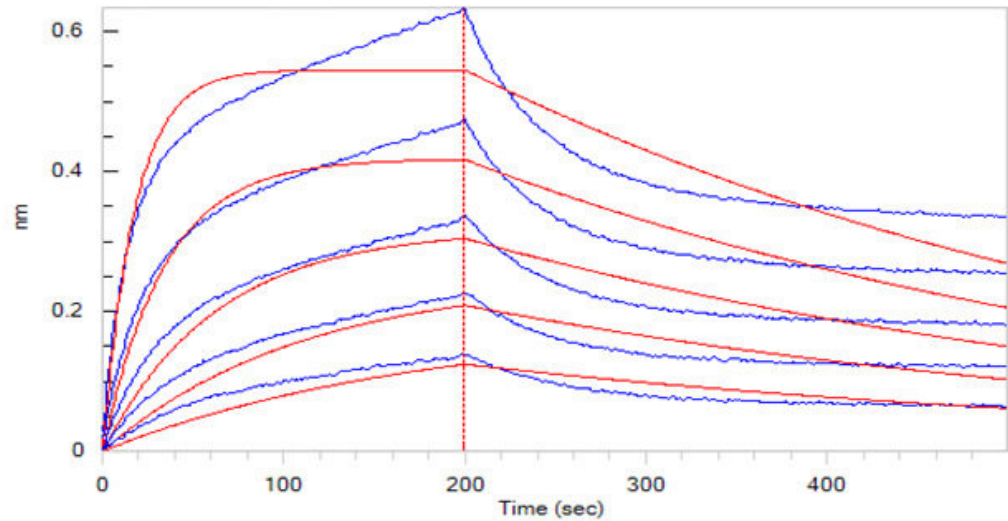


Immobilized SARS-CoV-2 S1 protein, His Tag (Cat. No. [S1N-C52H3](#)) at 2 µg/mL (100 µL/well) can bind Monoclonal Anti-SARS-CoV-S protein RBD Antibody, Human IgG1 with a linear range of 0.1-4 ng/mL (Routinely tested).

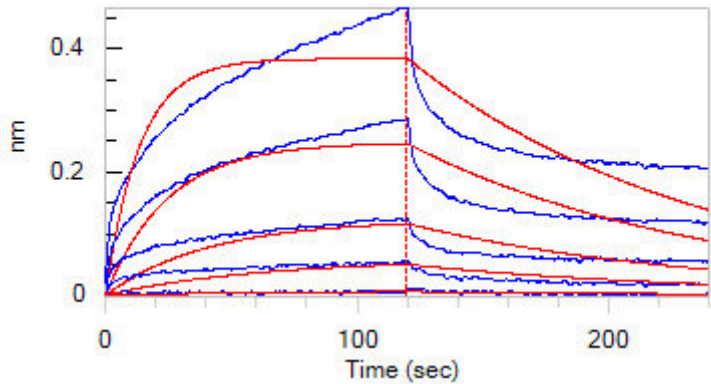


Immobilized SARS-CoV-2 S1 protein, His Tag (Cat. No. [S1N-C52H3](#)) at 1 µg/mL (100 µL/well) can bind Anti-SARS-CoV-2 Neutralizing Antibody, Human IgG1 (Cat. No. [SAD-S35](#)) with a linear range of 0.2441-7.8125 ng/mL (Routinely tested).

Bioactivity-BLI



Loaded Human ACE2, Fc Tag (Cat. No. [AC2-H5257](#)) on Protein A Biosensor, can bind SARS-CoV-2 S1 protein, His Tag (Cat. No. [S1N-C52H3](#)) with an affinity constant of 21.8 nM as determined in BLI assay (ForteBio Octet Red96e) (Routinely tested).



Loaded Biotinylated Human Neuropilin-1, His,Avitag (Cat. No. [NR1-H82E3](#)) on SA Biosensor, can bind SARS-CoV-2 S1 protein, His Tag (Cat. No. [S1N-C52H3](#)) with an affinity constant of 0.663 µM as determined in BLI assay (ForteBio Octet Red96e)

## 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](mailto:TechSupport@acrobiosystems.com) if you have any question on this product.