



### Synonym

Spike, S1 protein, Spike glycoprotein Subunit1, S glycoprotein Subunit1, Spike protein S1

### Source

SARS-CoV-2 S1 protein, His Tag (S1N-C52Hp) is expressed from human 293 cells (HEK293). It contains AA Val 16 - Arg 685 (Accession # [QHD43416.1](#)). L18F, T20N, P26S, D138Y, R190S, K417T, E484K, N501Y, D614G, H655Y mutations were identified in the SARS-CoV-2 Gamma variant (Pango lineage: P.1; other names: 20J/501Y.V3).

Predicted N-terminus: Val 16

### Molecular Characterization

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 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

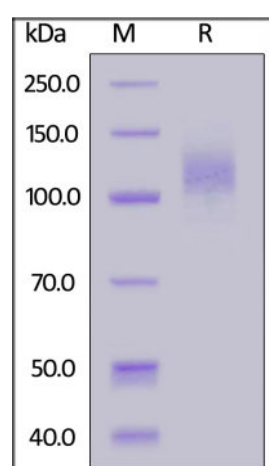
For long term storage, the product should be stored at lyophilized state at -20°C or lower.

*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

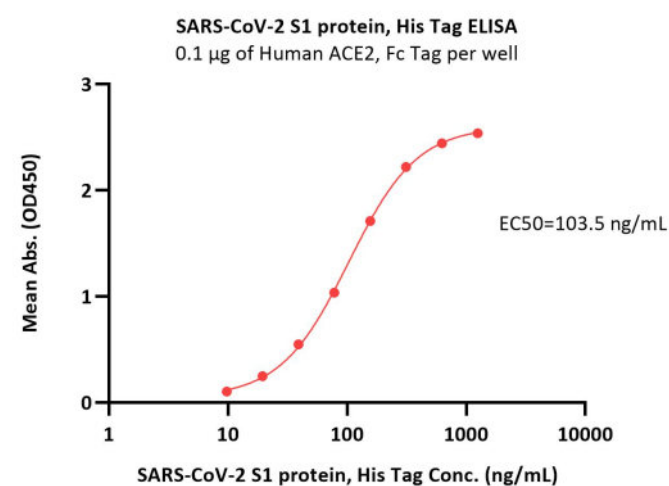
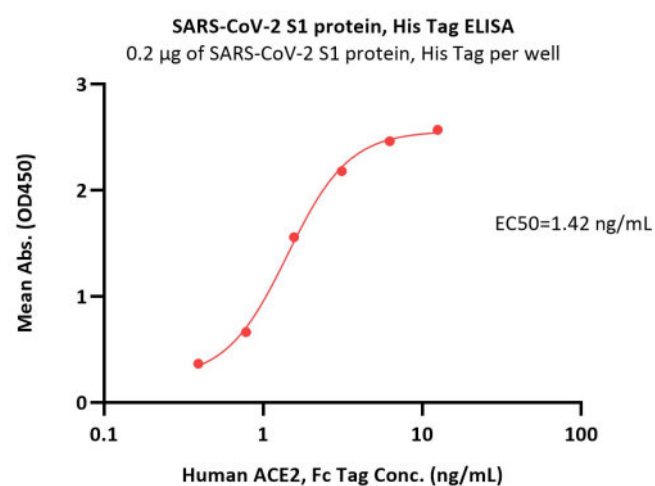


SARS-CoV-2 S1 protein, His Tag on SDS-PAGE under reducing (R) condition. The gel was stained with Coomassie Blue. The purity of the protein is greater than 90%.

### Bioactivity-ELISA

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Immobilized SARS-CoV-2 S1 protein, His Tag (Cat. No. S1N-C52Hp) at 2 µg/mL (100 µL/well) can bind Human ACE2, Fc Tag (Cat. No. AC2-H5257) with a linear range of 0.2-2 ng/mL (QC tested).

Immobilized Human ACE2, Fc Tag (Cat. No. AC2-H5257) at 1 µg/mL (100 µL/well) can bind SARS-CoV-2 S1 protein, His Tag (Cat. No. S1N-C52Hp) with a linear range of 9.8-156 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.

## Clinical and Translational Updates

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