

**Synonym**

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

**Source**

SARS-CoV-2 S1 protein, Fc Tag (S1D-C5254) is expressed from human 293 cells (HEK293). It contains AA Val 16 - Arg 685 (Accession # [QHD43416.1](#)). The mutations (HV69-70del, Y144del, N501Y, A570D, D614G, P681H) were identified in the SARS-CoV-2 Alpha variant (Pango lineage: B.1.1.7; other names: 20I/501Y.V1 or VOC 202012/01).

Predicted N-terminus: Val 16

**Molecular Characterization**

This protein carries a human IgG1 Fc tag at the C-terminus

The protein has a calculated MW of 101.1 kDa. The protein migrates as 125-150 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.

**Formulation**

Lyophilized from 0.22 µm filtered solution in 50 mM Tris, 100 mM Glycine, 0.2 M Arginine, 150 mM NaCl, pH7.5 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.*

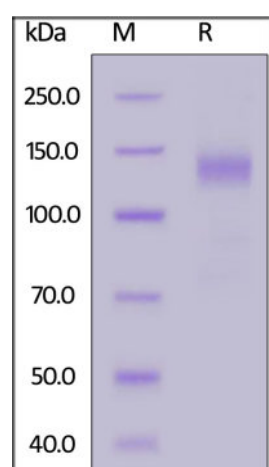
**Storage**

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:

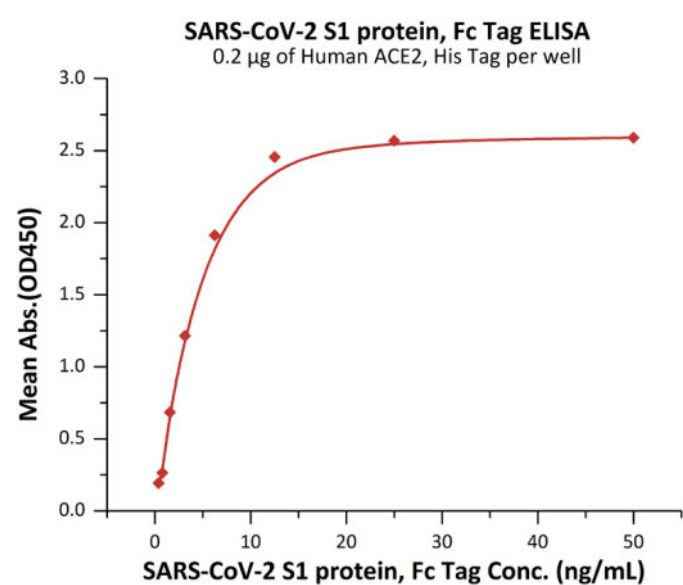
- -20°C to -70°C for 12 months in lyophilized state;
- -70°C for 3 months under sterile conditions after reconstitution.

**SDS-PAGE**

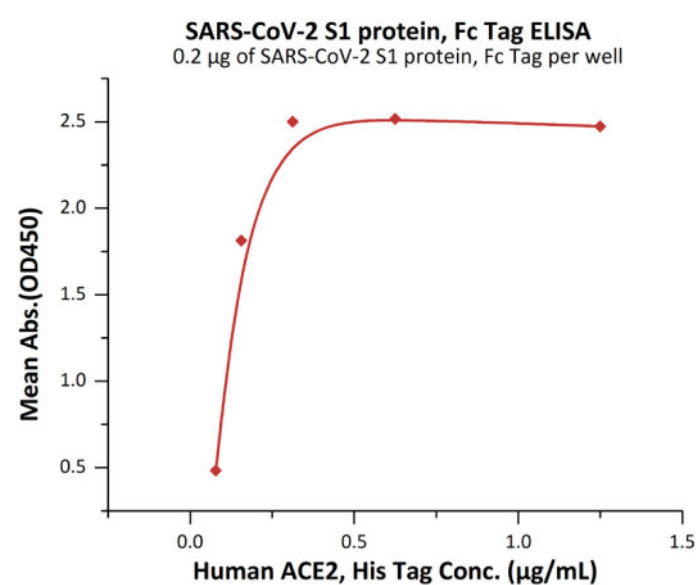
SARS-CoV-2 S1 protein, Fc Tag on SDS-PAGE under reducing (R) condition.

The gel was stained with Coomassie Blue. The purity of the protein is greater than 95%.

**Bioactivity-ELISA**



Immobilized Human ACE2, His Tag (Cat. No. AC2-H52H8) at 2 µg/mL (100 µL/well) can bind SARS-CoV-2 S1 protein, Fc Tag (Cat. No. S1D-C5254) with a linear range of 0.4-6 ng/mL (QC tested).



Immobilized SARS-CoV-2 S1 protein, Fc Tag (Cat. No. S1D-C5254) at 2 µg/mL (100 µL/well) can bind Human ACE2, His Tag (Cat. No. AC2-H52H8) with a linear range of 0.078-0.156 µg/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

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