



## Synonym

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

## Source

Biotinylated SARS-CoV-2 S1 protein, His,Avitag(S1N-C82E8) 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)	Poly-his	Avi
QHD43416.1		

This protein carries a polyhistidine tag at the C-terminus, followed by an Avi tag (Avitag™).

The protein has a calculated MW of 78.6 kDa. The protein migrates as 100-150 kDa under reducing (R) condition (SDS-PAGE) due to glycosylation.

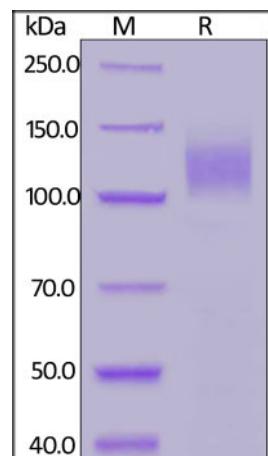
## Labeling

*Biotinylation of this product is performed using Avitag™ technology. Briefly, the single lysine residue in the Avitag is enzymatically labeled with biotin.*

## Protein Ratio

Passed as determined by the HABA assay / binding ELISA.

## SDS-PAGE



Biotinylated SARS-CoV-2 S1 protein, His,Avitag 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

## Purity

>95% 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

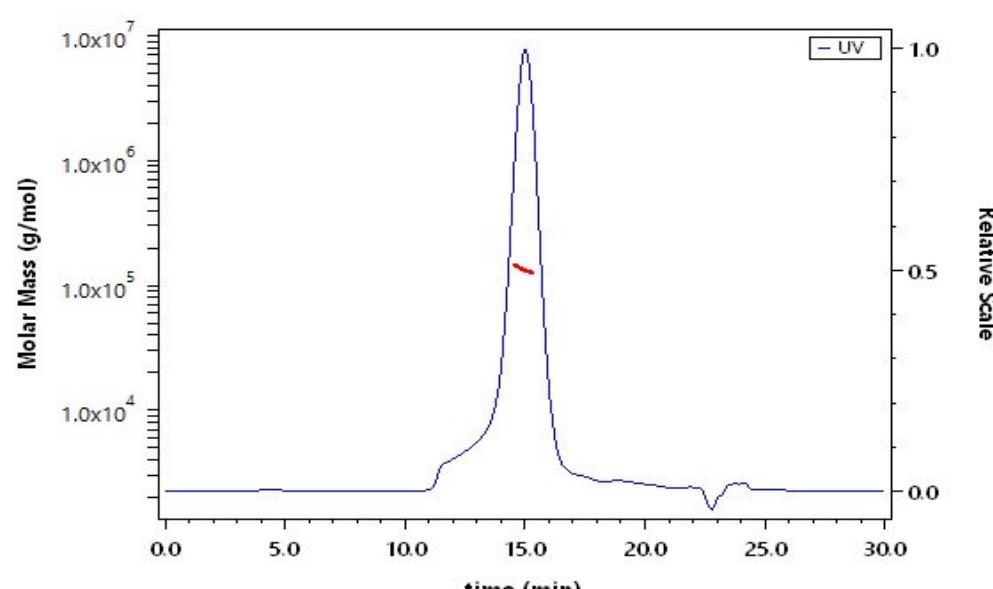
For long term storage, the product should be stored at lyophilized state at -20°C or lower.

*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.

## SEC-MALS

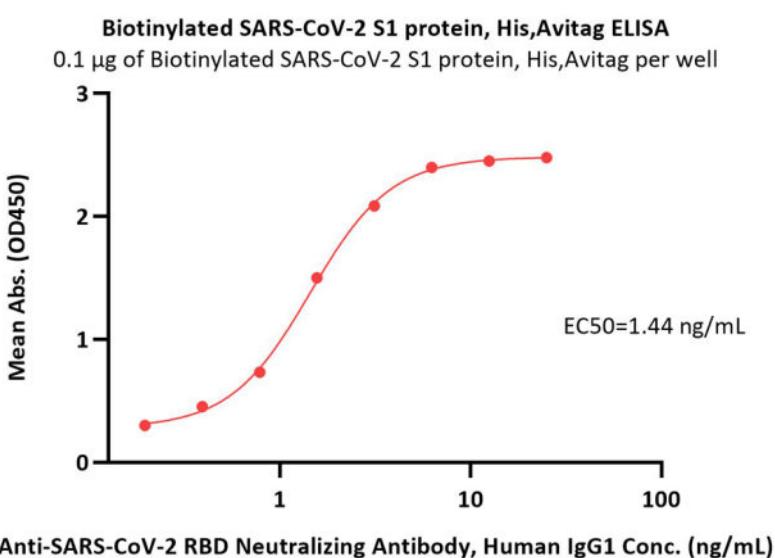
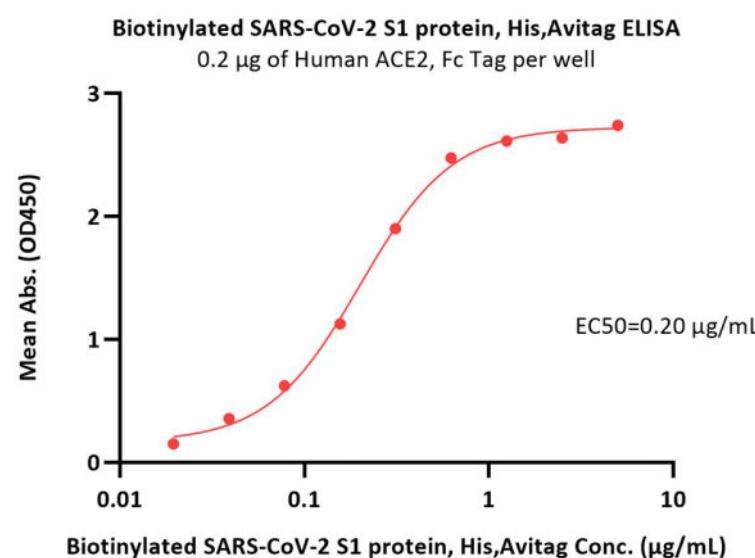


The purity of Biotinylated SARS-CoV-2 S1 protein, His,Avitag (Cat. No. S1N-C82E8) is more than 85% and the molecular weight of this protein is around 125-135 kDa verified by SEC-MALS.

[Report](#)

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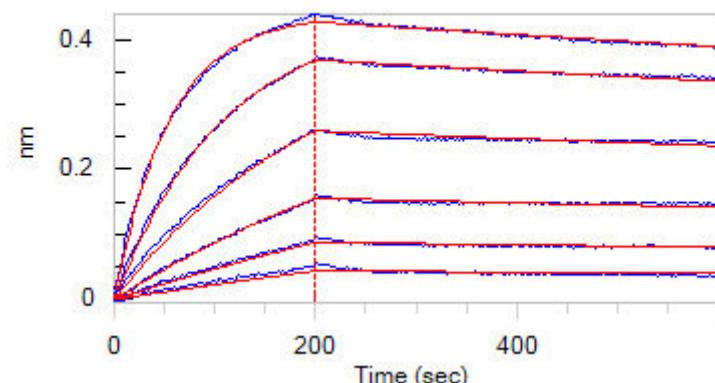




Immobilized Human ACE2, Fc Tag (Cat. No. AC2-H5257) at 2 µg/mL (100 µL/well) can bind Biotinylated SARS-CoV-2 S1 protein, His,Avitag (Cat. No. S1N-C82E8) with a linear range of 40-1250 ng/mL (QC tested).

Immobilized Biotinylated SARS-CoV-2 S1 protein, His,Avitag (Cat. No. S1N-C82E8) at 1 µg/mL (100 µL/well) on streptavidin (Cat. No. STN-N5116) precoated (0.5 µg/well) plate can bind Anti-SARS-CoV-2 RBD Neutralizing Antibody, Human IgG1 (Cat. No. SAD-S35) with a linear range of 0.2-3 ng/mL (Routinely tested).

## Bioactivity-BLI



Loaded Biotinylated SARS-CoV-2 S1 protein, His,Avitag (Cat. No. S1N-C82E8) on SA Biosensor, can bind Human ACE2, His Tag (Cat. No. AC2-H52H8) with an affinity constant of 1.61 nM as determined in BLI assay (ForteBio Octet Red96e) (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.

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