

**Synonym**

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

**Source**

Biotinylated 2019-nCoV (COVID-19) S1 protein, His,Avitag (MALS verified) (AMS.S1N-C82E8) is expressed from human 293 cells (HEK293). It contains AA Val16 - Arg 685 (Accession # QHD43416.1).

Predicted N-terminus: Val 16

**Molecular Characterization**



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

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.

**Biotinylation**

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

**Endotoxin**

Less than 1.0 EU per µg by the LAL method.

**Purity**

>90% as determined by SDS-PAGE.

>90% as determined by SEC-MALS.

**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**

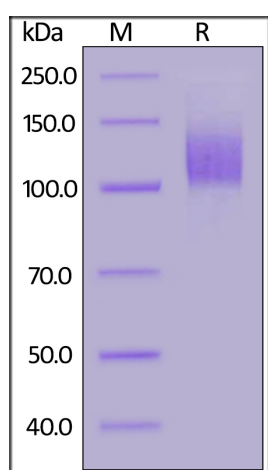
For long term storage, the product should be stored at lyophilized state at -20°C or lower.

*Please avoid repeated freeze-thaw cycles.*

This product is stable after storage at:

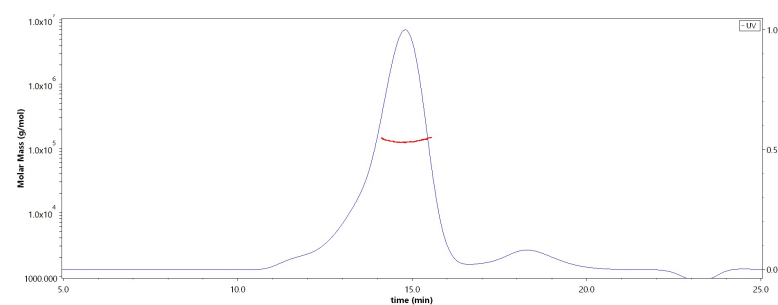
- -20°C to -70°C for 12 months in lyophilized state;
- -70°C for 3 months under sterile conditions after reconstitution.

**SDS-PAGE**



Biotinylated 2019-nCoV (COVID-19) S1 protein, His,Avitag (MALS verified) on SDS-PAGE under reducing (R) condition. The gel was stained overnight with Coomassie Blue. The purity of the protein is greater than 90%.

**SEC-MALS**

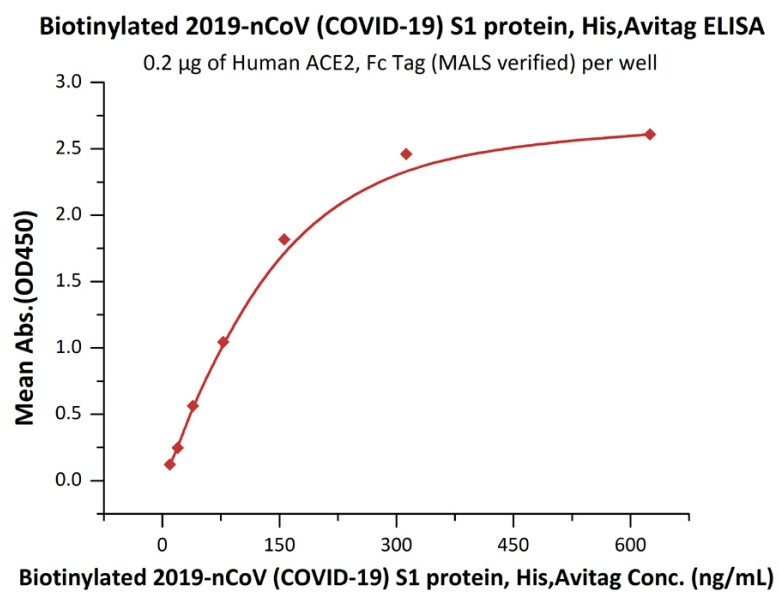


The purity of Biotinylated 2019-nCoV (COVID-19) S1 protein, His,Avitag (MALS verified) (Cat. No. AMS.S1N-C82E8) was more than 90% in HP-SEC, and around 120-140 kDa verified by SEC-MALS.

**Bioactivity-ELISA**

# Biotinylated 2019-nCoV (COVID-19) S1 protein, His,Avitag™ (MALS verified)

Catalog # AMS.S1N-C82E8



Immobilized Human ACE2, Fc Tag (MALS verified) (Cat. No. AMS.AC2-H5257) at 2 µg/mL (100 µL/well) can bind Biotinylated 2019-nCoV (COVID-19) S1 protein, His, Avitag (MALS verified) (Cat. No. AMS.S1N-C82E8) with a linear range of 10-156 ng/mL (QC tested).

## Background

Protein S (PROS1) is glycoprotein and expressed in many cell types supporting its reported involvement in multiple biological processes that include coagulation, apoptosis, cancer development and progression, and the innate immune response. Known receptors bind S1 are ACE2, angiotensin-converting enzyme 2, DPP4, CEACAM etc.. It's been reported that 2019-nCoV 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.](#)

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