

### Synonym

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

### Source

Biotinylated SARS-CoV-2 S protein (R683A, R685A), His,Avitag™, Super stable trimer (SPN-C82E9) is expressed from human 293 cells (HEK293). It contains AA Val 16 - Pro 1213 (Accession # QHD43416.1(R683A, R685A)) trimer Design. It is the biotinylated form of SARS-CoV-2 S protein (R683A, R685A), His Tag, Super stable trimer (MALS & NS-EM verified) (SPN-C52H9).

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 139.7 kDa. The protein migrates as 180-210 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.*

### Biotin:Protein Ratio

The biotin to protein ratio is *0.5-1* as determined by the HABA assay.

### Endotoxin

Less than 1.0 EU per µg by the LAL method.

### Purity

>95% as determined by SDS-PAGE.

>90% as determined by SEC-MALS.

### Formulation

Lyophilized from 0.22 µm filtered solution in 50 mM Tris, 150 mM NaCl, pH5.5. 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

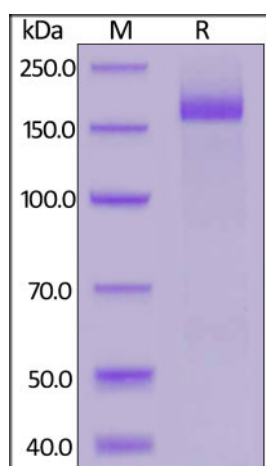
For long term storage, the product should be stored at lyophilized state at -20°C or lower.

*Please avoid repeated freeze-thaw cycles.*

This product is stable after storage at:

- 4-8°C for 12 months in lyophilized state;
- -70°C for 3 years under sterile conditions after reconstitution.

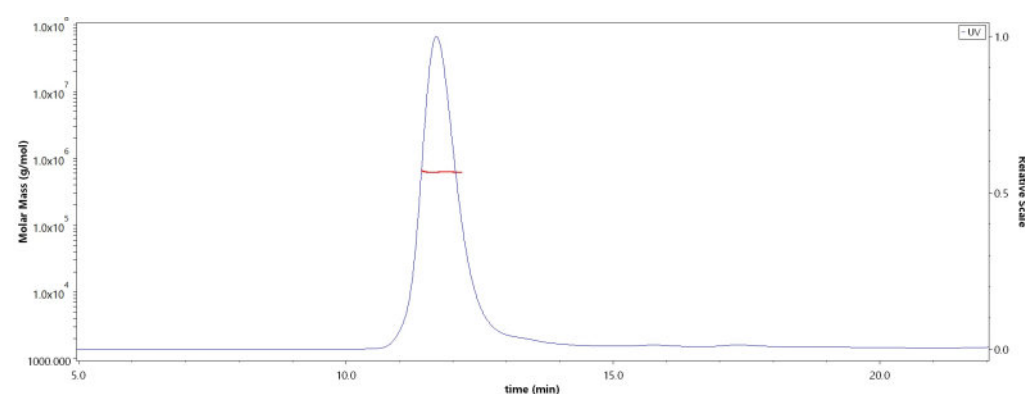
### SDS-PAGE



Biotinylated SARS-CoV-2 S protein (R683A, R685A), His,Avitag™, Super stable trimer(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 95%.

### Bioactivity-ELISA

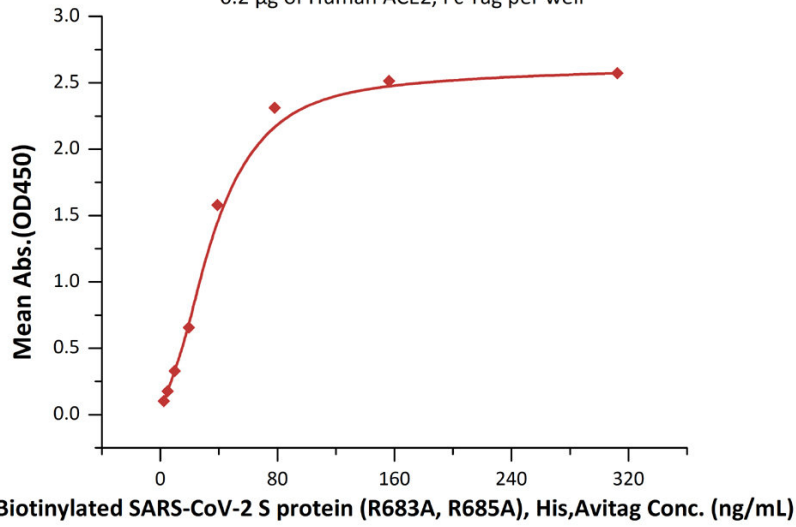
### SEC-MALS



The purity of Biotinylated SARS-CoV-2 (COVID-19) S protein (R683A, R685A), His,Avitag™, Super stable trimer(Cat. No. SPN-C82E9) was more than 90% and around 610-650 kDa verified by SEC-MALS.

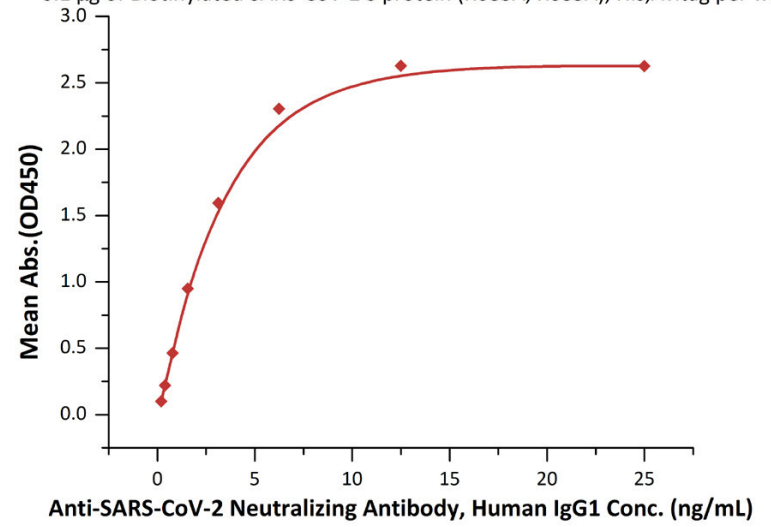
**Biotinylated SARS-CoV-2 S protein (R683A, R685A), His,Avitag ELISA**

0.2 µg of Human ACE2, Fc Tag per well



**Biotinylated SARS-CoV-2 S protein (R683A, R685A), His,Avitag ELISA**

0.1 µg of Biotinylated SARS-CoV-2 S protein (R683A, R685A), His,Avitag per well



Immobilized Human ACE2, Fc Tag (Cat. No. [AC2-H5257](#)) at 2 µg/mL (100 µL/well) can bind Biotinylated SARS-CoV-2 S protein (R683A, R685A), His,Avitag™, Super stable trimer (Cat. No. [SPN-C82E9](#)) with a linear range of 2-39 ng/mL (QC tested).

Immobilized Biotinylated SARS-CoV-2 S protein (R683A, R685A), His,Avitag™, Super stable trimer(MALS verified) (Cat. No. [SPN-C82E9](#)) at 1 µg/mL (100 µL/well) on Recombinant Streptavidin (Cat. No. [STN-N5116](#)) precoated (0.5µg/well) plate, can bind can bind Anti-SARS-CoV-2 Neutralizing Antibody, Human IgG1 (Cat. No. SAD-S35) with a linear range of 0.2-3 ng/mL (QC tested).

## Background

It's been reported that SARS-CoV-2 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

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