

## Synonym

Spike,S protein,Spike glycoprotein,S glycoprotein

## Source

Biotinylated SARS-CoV-2 Spike Trimer, His,Avitag (SPN-C82Eq) is the ectodomain of SARS-CoV-2 spike protein which contains AA Val 16 - Pro 1213 (Accession # [QHD43416.1](#)). The mutations C136F, Y144del, R190S, D215G, LA242-243del, Y449H, E484K, N501Y, D614G, H655Y, N679K, T716I, T859N were identified in the SARS-CoV-2 variant C.1.2. The recombinant protein is expressed from human 293 cells (HEK293) with T4 fibrin trimerization motif and a polyhistidine tag at the C-terminus. Proline substitutions (F817P, A892P, A899P, A942P, K986P, V987P) and alanine substitutions (R683A and R685A) are introduced to stabilize the trimeric prefusion state of SARS-CoV-2 S protein and abolish the furin cleavage site, respectively.

Predicted N-terminus: Val 16

## Molecular Characterization

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

The protein has a calculated MW of 139.5 kDa. The protein migrates as 180-220 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.

## 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 PBS 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

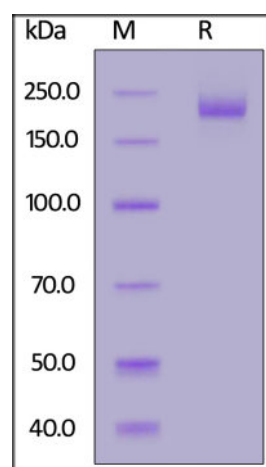
For long term storage, the product should be stored at lyophilized state at -20°C or lower.

*Please avoid repeated freeze-thaw cycles.*

This product is stable after storage at:

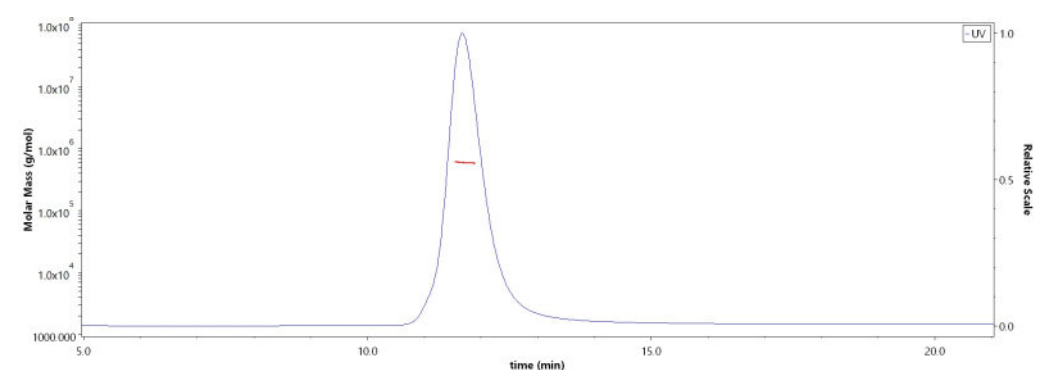
- -20°C to -70°C for 12 months in lyophilized state;
- -70°C for 3 months under sterile conditions after reconstitution.

## SDS-PAGE



Biotinylated SARS-CoV-2 Spike Trimer, His,Avitag on SDS-PAGE under reducing (R) condition. The gel was stained overnight with Coomassie Blue. The purity of the protein is greater than 95%.

## SEC-MALS

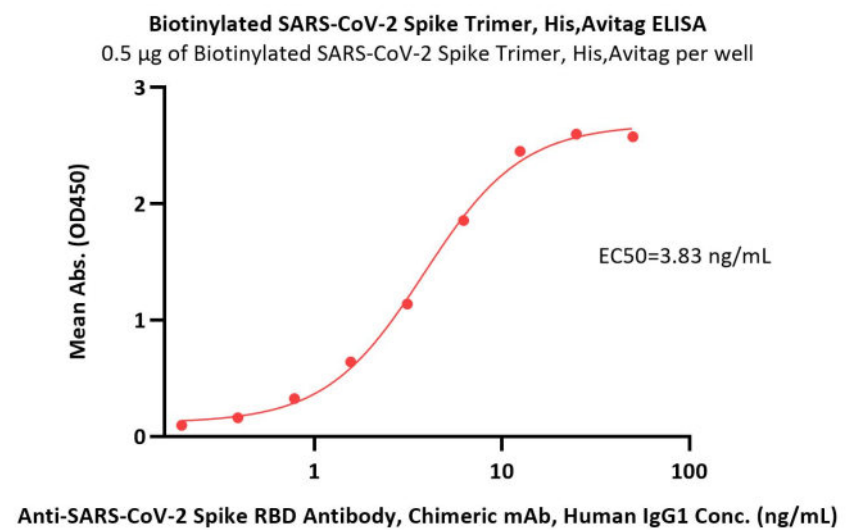
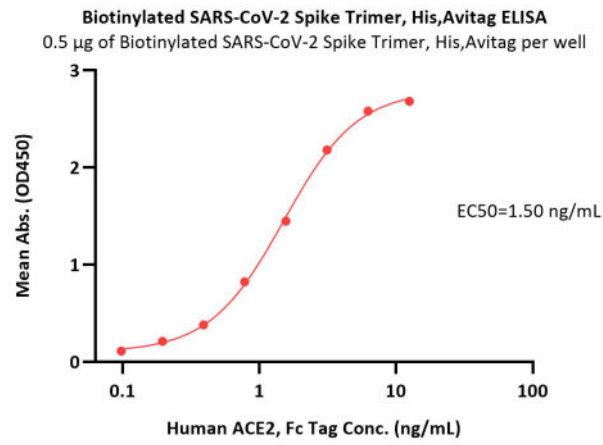


The purity of Biotinylated SARS-CoV-2 Spike Trimer, His,Avitag (Cat. No. SPN-C82Eq) is more than 90% and the molecular weight of this protein is around 560-620 kDa verified by SEC-MALS.

[Report](#)

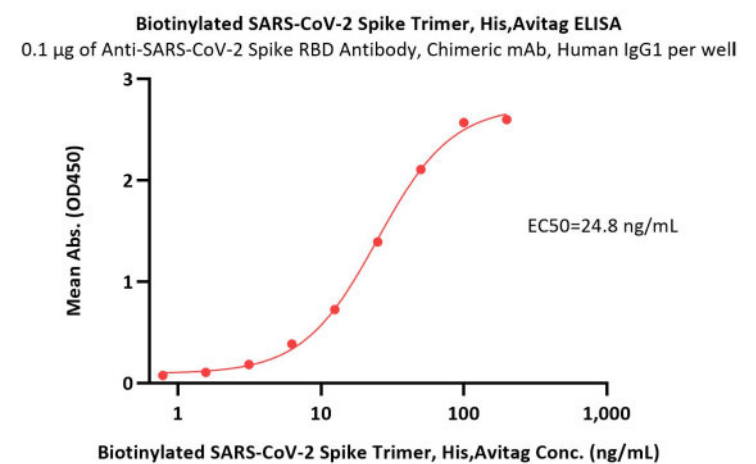
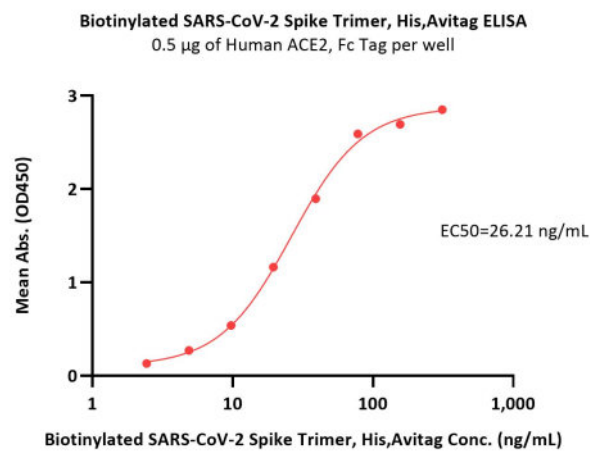
Catalog # SPN-C82Eq

## Bioactivity-ELISA



Immobilized Biotinylated SARS-CoV-2 Spike Trimer, His,Avitag (Cat. No. SPN-C82Eq) at 5 µg/mL (100 µL/well) on streptavidin (Cat. No. STN-N5116) precoated (0.5 µg/well) plate can bind Human ACE2, Fc Tag (Cat. No. AC2-H5257) with a linear range of 0.1-3 ng/mL (QC tested).

Immobilized Biotinylated SARS-CoV-2 Spike Trimer, His,Avitag (Cat. No. SPN-C82Eq) at 5 µg/mL (100 µL/well) on streptavidin (Cat. No. STN-N5116) precoated (0.5 µg/well) plate can bind Anti-SARS-CoV-2 Spike RBD Antibody, Chimeric mAb, Human IgG1 (Cat. No. S1N-M122) with a linear range of 0.2-6 ng/mL (Routinely tested).



Immobilized Human ACE2, Fc Tag (Cat. No. AC2-H5257) at 5 µg/mL (100 µL/well) can bind Biotinylated SARS-CoV-2 Spike Trimer, His,Avitag (Cat. No. SPN-C82Eq) with a linear range of 2-39 ng/mL (Routinely tested).

Immobilized Anti-SARS-CoV-2 Spike RBD Antibody, Chimeric mAb, Human IgG1 (Cat. No. S1N-M122) at 1 µg/mL (100 µL/well) can bind Biotinylated SARS-CoV-2 Spike Trimer, His,Avitag (Cat. No. SPN-C82Eq) with a linear range of 0.001-0.05 µg/mL (Routinely 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.

## Clinical and Translational Updates

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