Biotinylated SARS-CoV-2 S protein, His,Avitag™, Super stable trimer (MALS verified)

Catalog # SPN-C82E9

Synonym

Spike,S protein,Spike glycoprotein,S glycoprotein

Source

Biotinylated SARS-CoV-2 S protein, His, Avitag, Super stable trimer (SPN-C82E9) is the ectodomain of SARS-CoV-2 S protein which contains AA Val 16 - Pro 1213 (Accession # QHD43416.1). The recombinant protein is expressed from human 293 cells (HEK293) with T4 fibritin 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 139.7 kDa. The protein migrates as 180-210 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 0.1 M Sodium citrate, pH5.5 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

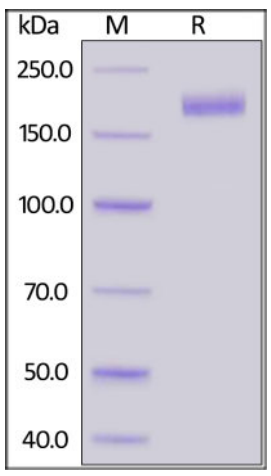
For long term storage, the product should be stored at lyophilized state at -20°C or lower.

Please avoid repeated freeze-thaw cycles.

This product is stable after storage at:

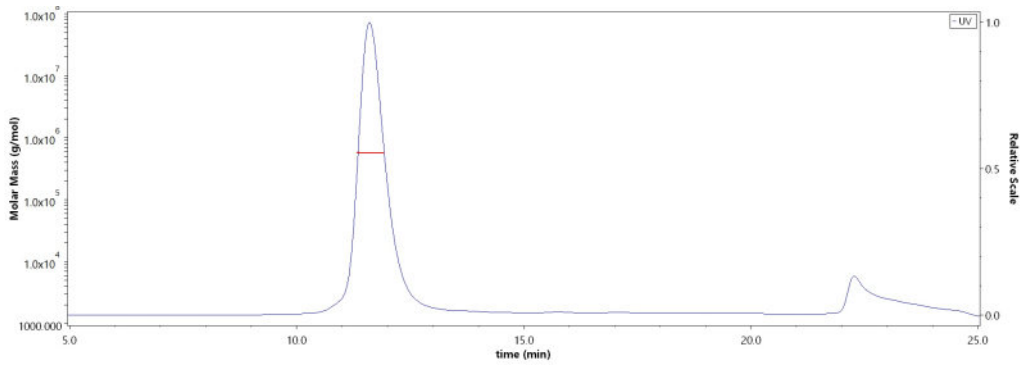
- -20°C to -70°C for 12 months in lyophilized state;
- -70°C for 3 months under sterile conditions after reconstitution.

SDS-PAGE



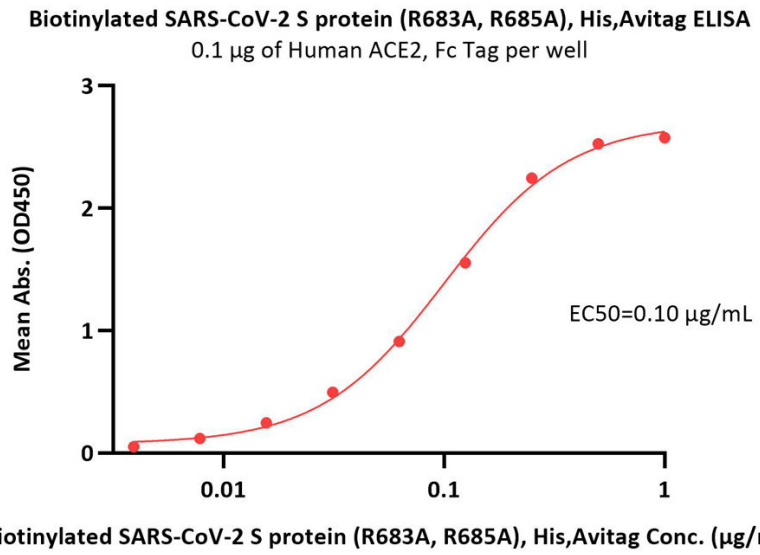
Biotinylated SARS-CoV-2 S protein, His,Avitag, Super stable trimer on SDS-PAGE under reducing (R) condition. The gel was stained with Coomassie Blue. The purity of the protein is greater than 95%.

SEC-MALS

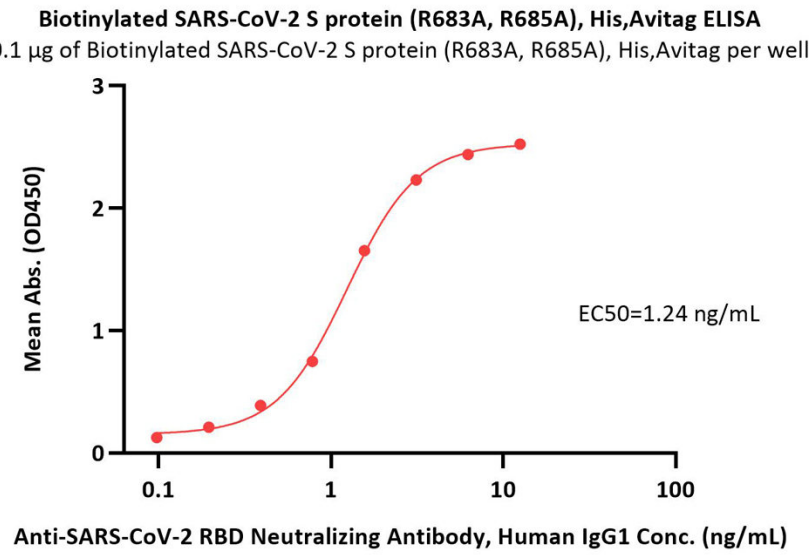


The purity of Biotinylated SARS-CoV-2 S protein, His,Avitag, Super stable trimer (Cat. No. SPN-C82E9) is more than 90% and the molecular weight of this protein is around 520-620 kDa verified by SEC-MALS.
Report

Bioactivity-ELISA

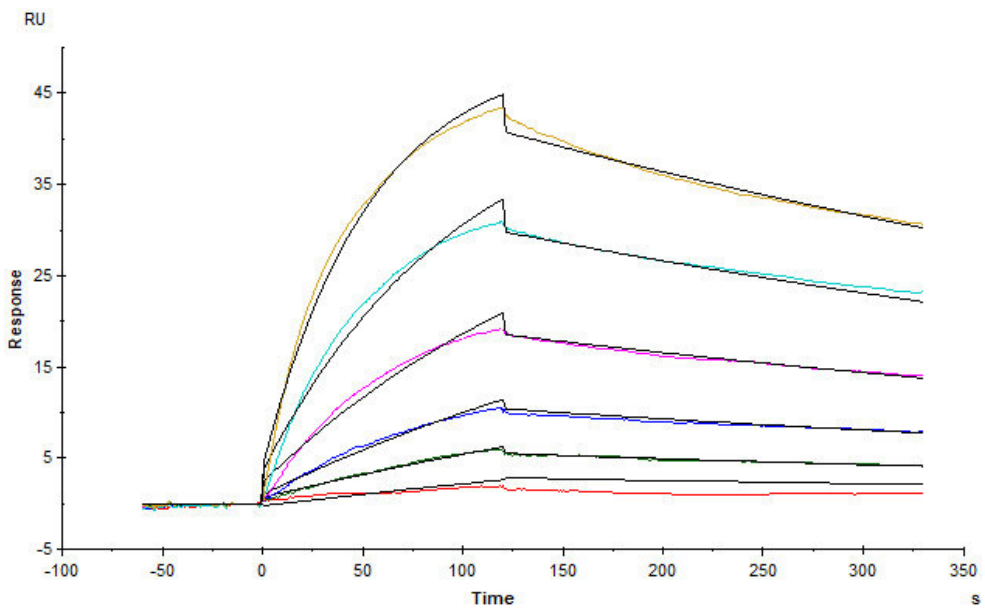


Immobilized Human ACE2, Fc Tag (Cat. No. AC2-H5257) at 1 μg/mL (100 μL/well) can bind Biotinylated SARS-CoV-2 S protein, His,Avitag, Super stable trimer (Cat. No. SPN-C82E9) with a linear range of 0.004-0.125 μg/mL (QC tested).



Immobilized Biotinylated SARS-CoV-2 S protein, His,Avitag, Super stable trimer (Cat. No. SPN-C82E9) at 1 μg/mL (100 μL/well)on Recombinant 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 0.1-2 ng/mL (Routinely tested).

Bioactivity-SPR



Biotinylated SARS-CoV-2 S protein, His,Avitag, Super stable trimer (Cat. No. SPN-C82E9) captured on Biotin CAP - Series S sensor Chip can bind Human ACE2, His Tag (Cat. No. AC2-H52H8) with an affinity constant of 20.1 nM as determined in a SPR assay (Biacore T200).

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