Biotinylated SARS-CoV-2 Spike Trimer Protein (T19R, G142D, EF156-157del, R158G, L452R, T478K, D614G, P681R, D950N), His,Avitag™ (MALS verified)

Catalog # SPN-C82Ec

Synonym

Spike,S protein,Spike glycoprotein,S glycoprotein

Source

Biotinylated SARS-CoV-2 Spike Trimer, His,Avitag (SPN-C82Ec) is expressed from human 293 cells (HEK293). It contains AA Val 16 - Pro 1213 (Accession # QHD43416.1). The mutations (T19R, G142D, EF156-157del, R158G, L452R, T478K, D614G, P681R, D950N) were identified in the SARS-CoV-2 Delta variant (Pango lineage: B.1.617.2; other names: 21A/S:478K). 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 160-200 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.

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

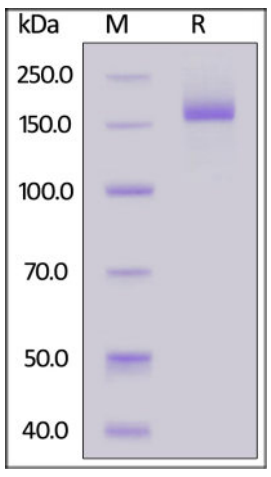
For long term storage, the product should be stored at lyophilized state at -20°C or lower.

Please avoid repeated freeze-thaw cycles.

This product is stable after storage at:

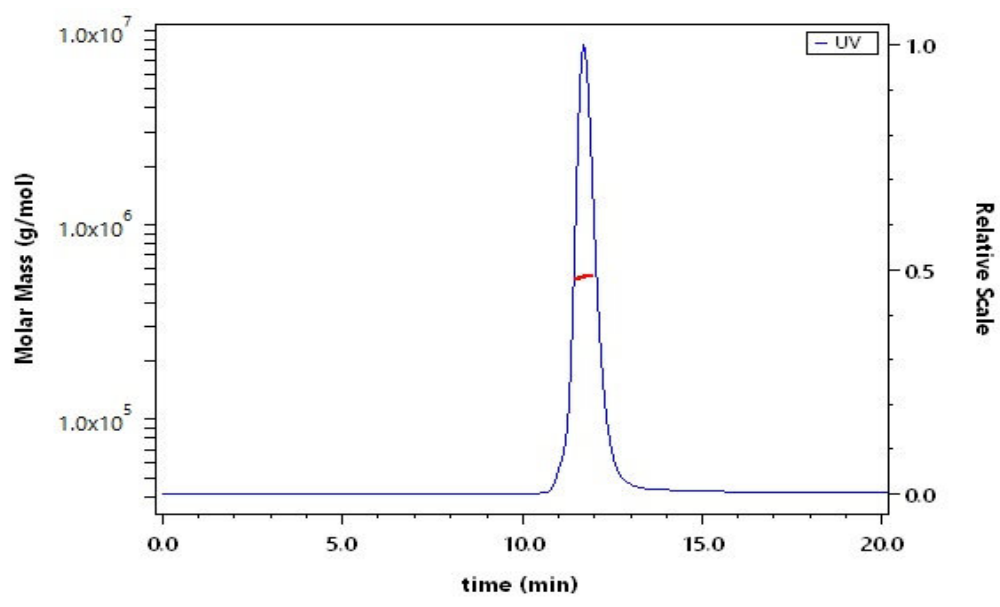
- -20°C to -70°C for 12 months in lyophilized state;
- -70°C for 3 months under sterile conditions after reconstitution.

SDS-PAGE



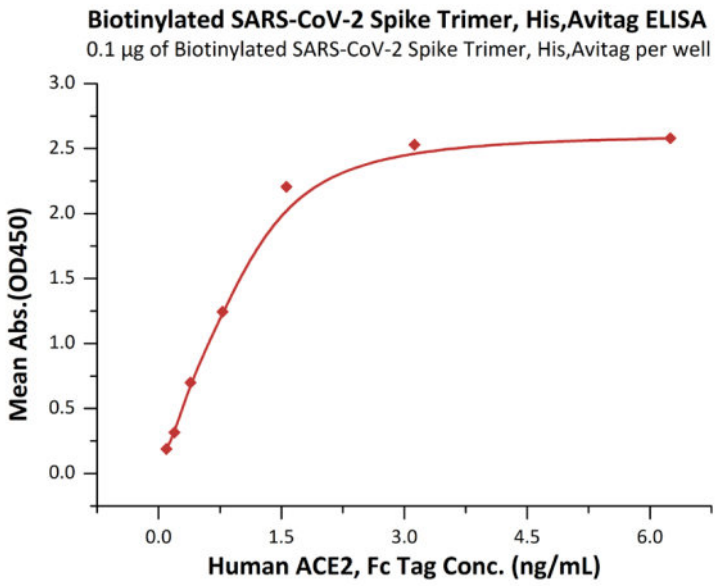
Biotinylated SARS-CoV-2 Spike Trimer, His,Avitag on SDS-PAGE under reducing (R) condition. The gel was stained with Coomassie Blue. The purity of the protein is greater than 95%.

SEC-MALS

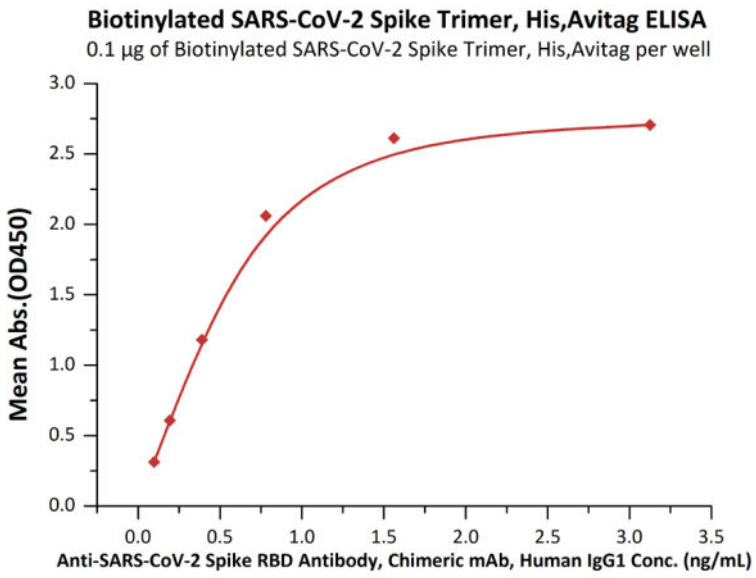


The purity of Biotinylated SARS-CoV-2 Spike Trimer, His,Avitag (Cat. No. SPN-C82Ec) is more than 90% and the molecular weight of this protein is around 510-560 kDa verified by SEC-MALS.
Report

Bioactivity-ELISA



Immobilized Biotinylated SARS-CoV-2 Spike Trimer, His,Avitag (Cat. No. SPN-C82Ec) at 1 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 0.1-2 ng/mL (QC tested).



Immobilized Biotinylated SARS-CoV-2 Spike Trimer, His,Avitag (Cat. No. SPN-C82Ec) 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 Spike RBD Antibody, Chimeric mAb, Human IgG1 (Cat. No. S1N-M122) with a linear range of 0.1-1 ng/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.