Biotinylated SARS-CoV-2 Spike Trimer (T95I, G142D, E154K, L452R, E484Q, D614G, P681R, Q1071H), His,Avitag™ (MALS verified)

Catalog # SPN-C82E7

Synonym

Spike,S protein,Spike glycoprotein,S glycoprotein

Source

Biotinylated SARS-CoV-2 Spike Trimer, His,Avitag (SPN-C82E7) is expressed from human 293 cells (HEK293). It contains AA Val 16 - Pro 1213 (Accession # QHD43416.1). The mutations (T95I, G142D, E154K, L452R, E484Q, D614G, P681R) were identified in the SARS-CoV-2 Kappa variant (Pango lineage: B.1.617.1; other names: 21A/S:154K). 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 139.9 kDa. The protein migrates as 170-200 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

>95% as determined by SDS-PAGE.

Formulation

Lyophilized from 0.22 μm filtered solution in PBS. 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.

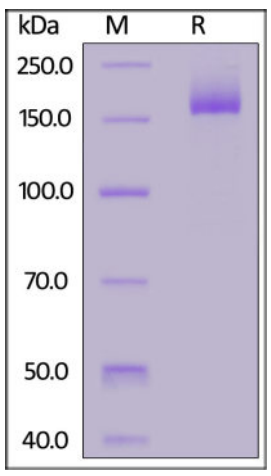
Storage

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

Please avoid repeated freeze-thaw cycles.

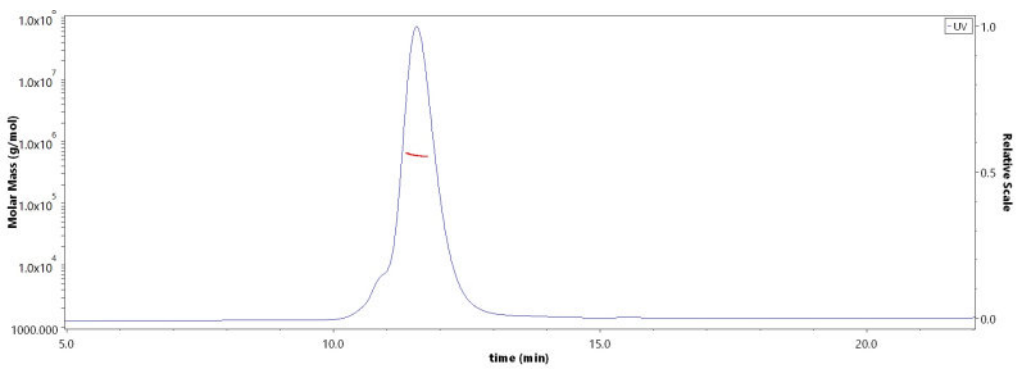
This product is stable after storage at:
- -20°C to -70°C for 12 months in lyophilized state;
- -70°C for 3 months under sterile conditions after reconstitution.

SDS-PAGE



Biotinylated 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

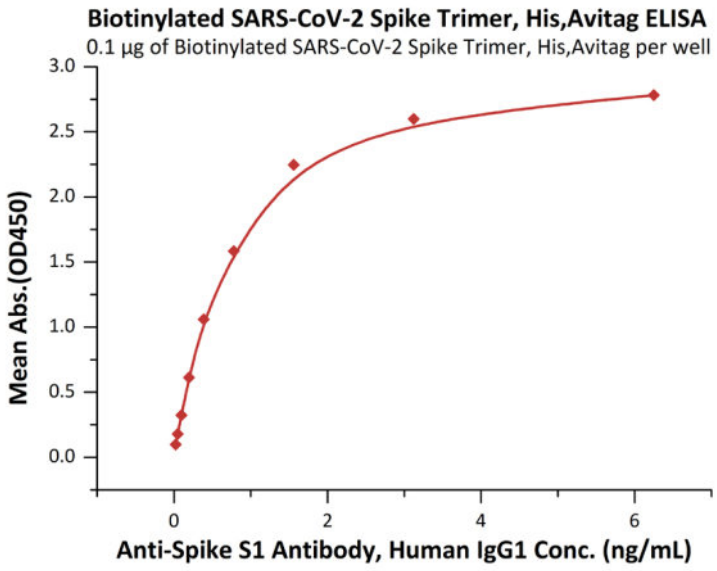


The purity of Biotinylated SARS-CoV-2 Spike Trimer, His,Avitag (Cat. No. SPN-C82E7) is more than 85% and the molecular weight of this protein is around 560-610 kDa verified by SEC-MALS.
Report

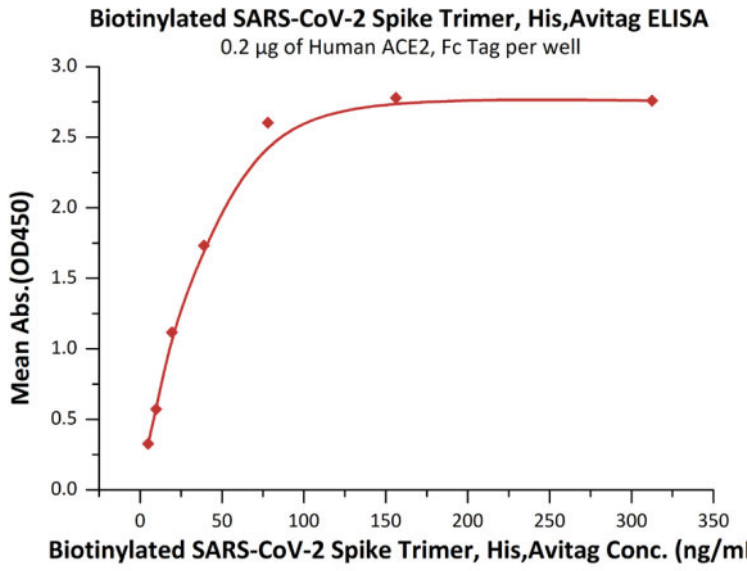
Bioactivity-ELISA

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Immobilized Biotinylated SARS-CoV-2 Spike Trimer, His,Avitag (Cat. No. SPN-C82E7) at 1 μg/mL (100 μL/well) on streptavidin (Cat. No. STN-N5116) precoated (0.5 μg/well) plate can bind Anti-Spike S1 Antibody, Human IgG1 with a linear range of 0.2-2 ng/mL (QC tested).



Immobilized Human ACE2, Fc Tag (Cat. No. AC2-H5257) at 2 μg/mL (100 μL/well) can bind Biotinylated SARS-CoV-2 Spike Trimer, His,Avitag (Cat. No. SPN-C82E7) with a linear range of 39-78 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.

Clinical and Translational Updates

Please contact us via TechSupport@acrobiosystems.com if you have any question on this product.