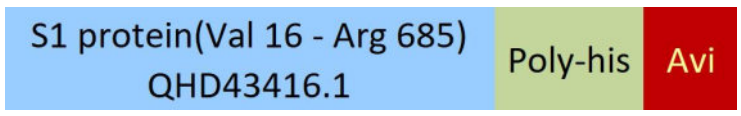
Synonym

Spike,S1 protein,Spike glycoprotein Subunit1,S glycoprotein Subunit1,Spike protein S1

Source

Biotinylated SARS-CoV-2 S1 protein, His,Avitag(S1N-C82E8) is expressed from human 293 cells (HEK293). It contains AA Val 16 - Arg 685 (Accession # QHD43416.1).
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 78.6 kDa. The protein migrates as 100-150 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.

Formulation

Lyophilized from 0.22 μm filtered solution in PBS, pH7.4 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

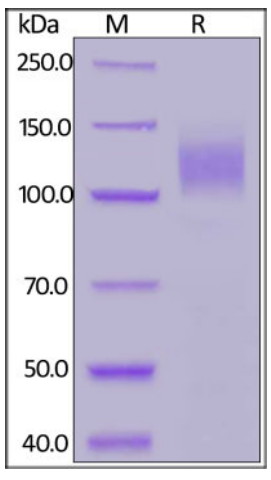
For long term storage, the product should be stored at lyophilized state at -20°C or lower.

Please avoid repeated freeze-thaw cycles.

This product is stable after storage at:

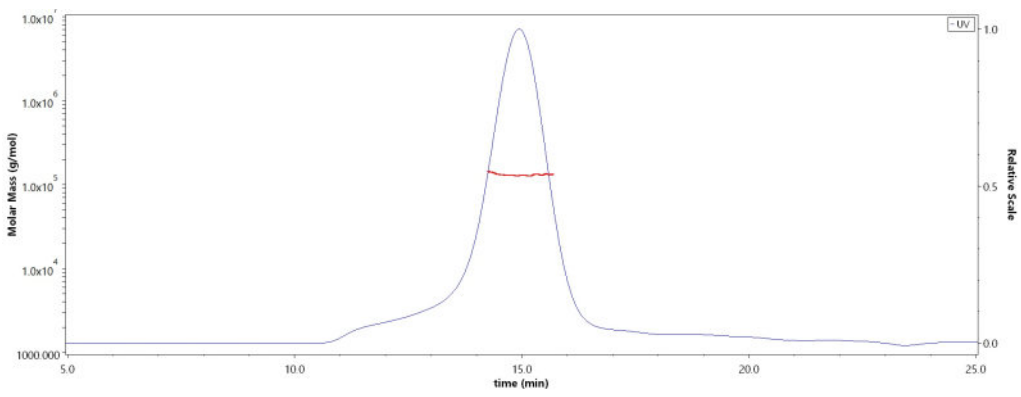
- -20°C to -70°C for 12 months in lyophilized state;
- -70°C for 3 months under sterile conditions after reconstitution.

SDS-PAGE



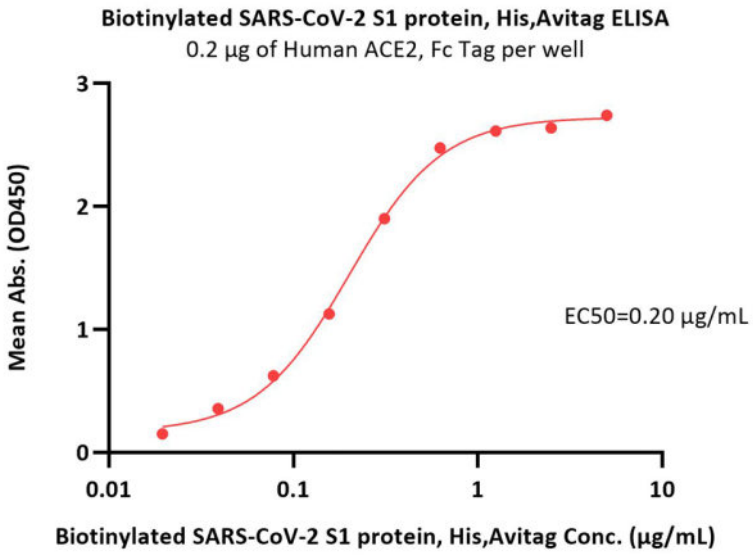
Biotinylated SARS-CoV-2 S1 protein, His,Avitag on SDS-PAGE under reducing (R) condition. The gel was stained with Coomassie Blue. The purity of the protein is greater than 95%.

SEC-MALS

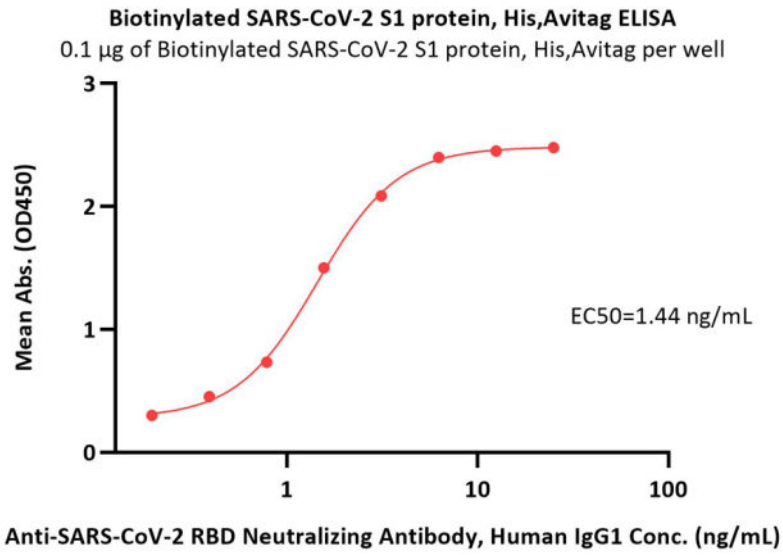


The purity of Biotinylated SARS-CoV-2 S1 protein, His,Avitag (Cat. No. S1N-C82E8) is more than 85% and the molecular weight of this protein is around 125-135 kDa verified by SEC-MALS.
Report

Bioactivity-ELISA

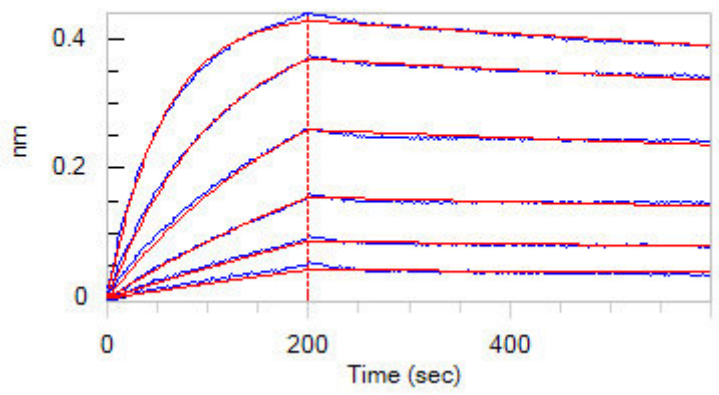


Immobilized Human ACE2, Fc Tag (Cat. No. AC2-H5257) at 2 μg/mL (100 μL/well) can bind Biotinylated SARS-CoV-2 S1 protein, His,Avitag (Cat. No. S1N-C82E8) with a linear range of 40-1250 ng/mL(QC tested).



Immobilized Biotinylated SARS-CoV-2 S1 protein, His,Avitag (Cat. No. S1N-C82E8) 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 RBD Neutralizing Antibody, Human IgG1 (Cat. No. SAD-S35) with a linear range of 0.2-3 ng/mL (Routinely tested).

Bioactivity-BLI



Loaded Biotinylated SARS-CoV-2 S1 protein, His,Avitag (Cat. No. S1N-C82E8) on SA Biosensor, can bind Human ACE2, His Tag (Cat. No. AC2-H52H8) with an affinity constant of 1.61 nM as determined in BLI assay (ForteBio Octet Red96e) (Routinely tested).

Background

It's been reported that Coronavirus 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