

Synonym

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

Source

SARS-CoV-2 S1 protein (N501Y), His Tag (S1N-C52Hg) is expressed from human 293 cells (HEK293). It contains AA Val 16 - Arg 685 (Accession # [QHD43416.1](#) (N501Y)). N501Y mutation was identified in multiple SARS-CoV-2 Variants of Concerns (VOCs), i.e. the Alpha variant (Pango lineage: B.1.1.7; other names: 20I/501Y.V1 or VOC 202012/01), the Beta variant (Pango lineage: B.1.351; other names: 20H/501Y.V2), the Gamma variant (Pango lineage: P.1; other names: 20J/501Y.V3).

Predicted N-terminus: Val 16

Molecular Characterization



This protein carries a polyhistidine tag at the C-terminus

The protein has a calculated MW of 76.9 kDa. The protein migrates as 110-130 kDa under reducing (R) condition (SDS-PAGE) due to glycosylation.

Endotoxin

Less than 1.0 EU per µg by the LAL method.

Purity

>90% 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

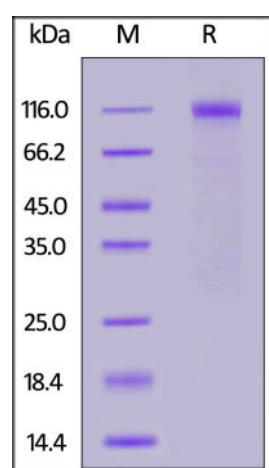
For long term storage, the product should be stored at lyophilized state at -20°C or lower.

Please avoid repeated freeze-thaw cycles.

This product is stable after storage at:

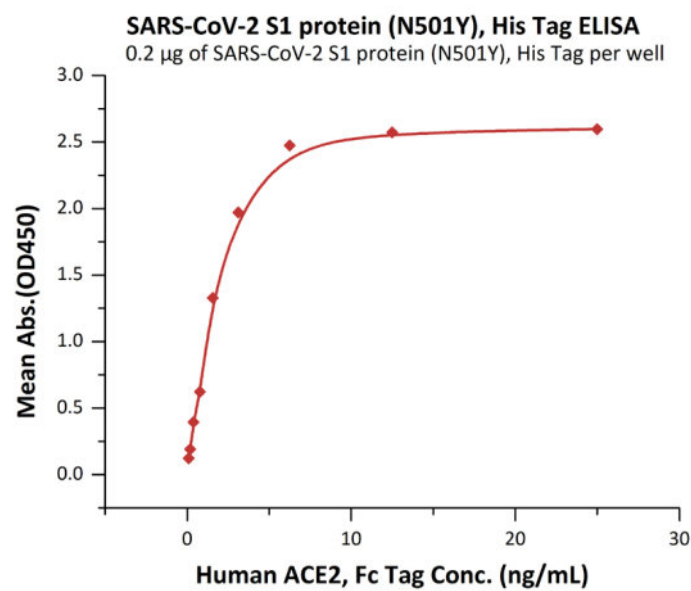
- -20°C to -70°C for 12 months in lyophilized state;
- -70°C for 3 months under sterile conditions after reconstitution.

SDS-PAGE

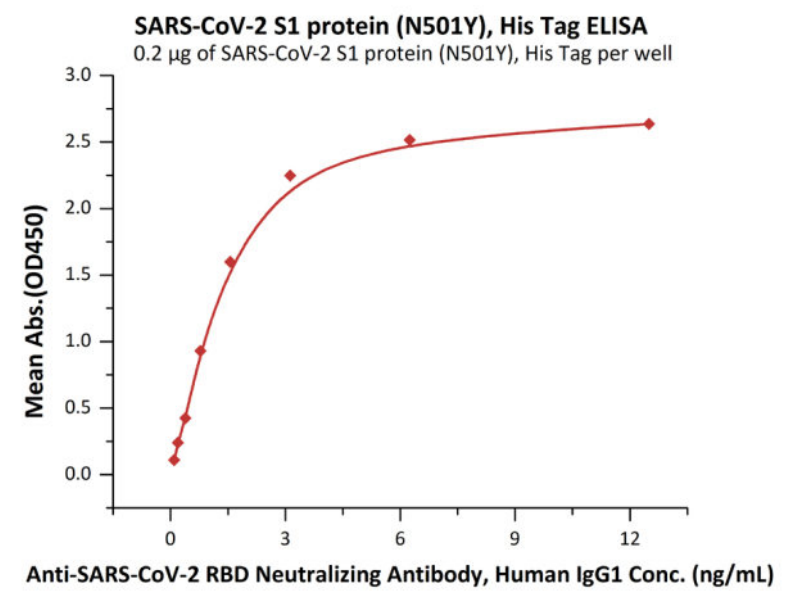


SARS-CoV-2 S1 protein (N501Y), His Tag on SDS-PAGE under reducing (R) condition. The gel was stained with Coomassie Blue. The purity of the protein is greater than 90%.

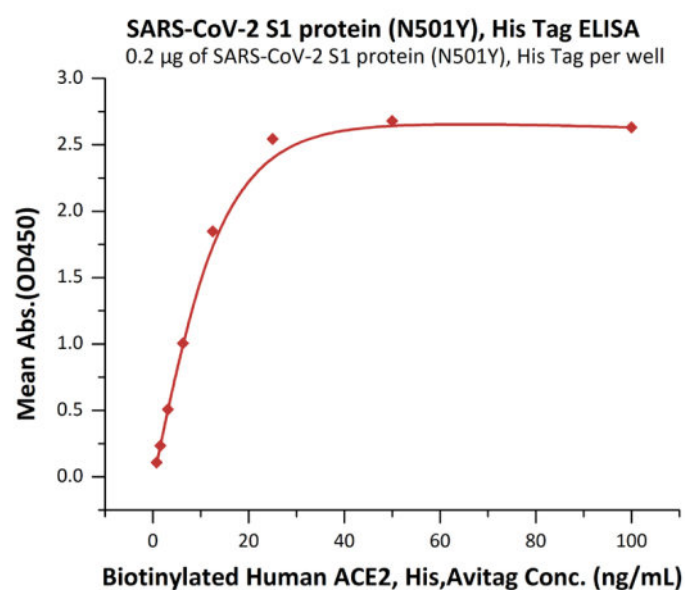
Bioactivity-ELISA



Immobilized SARS-CoV-2 S1 protein (N501Y), His Tag (Cat. No. S1N-C52Hg) at 2 µg/mL (100 µL/well) can bind Human ACE2, Fc Tag (Cat. No. AC2-H5257) with a linear range of 0.1-3 ng/mL (QC tested).



Immobilized SARS-CoV-2 S1 protein (N501Y), His Tag (Cat. No. S1N-C52Hg) at 2 µg/mL (100 µL/well) can bind Anti-SARS-CoV-2 RBD Neutralizing Antibody, Human IgG1 (Cat. No. SAD-S35) with a linear range of 0.1-3 ng/mL (Routinely tested).



Immobilized SARS-CoV-2 S1 protein (N501Y), His Tag (Cat. No. S1N-C52Hg) at 2 µg/mL (100 µL/well) can bind Biotinylated Human ACE2, His,Avitag (Cat. No. AC2-H82E6) with a linear range of 0.8-25 ng/mL (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

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