

Synonym

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

Source

SARS-CoV-2 S1 protein, Fc Tag (S1D-C5253) is expressed from human 293 cells (HEK293). It contains AA Val 16 - Arg 685 (Accession # [QHD43416.1](#)). The mutations (L18F, T20N, P26S, D138Y, R190S, K417T, E484K, N501Y, D614G, H655Y) were identified in the SARS-CoV-2 Gamma variant (Pango lineage: P.1; other names: 20J/501Y.V3).

Predicted N-terminus: Val 16

Molecular Characterization

This protein carries a human IgG1 Fc tag at the C-terminus

The protein has a calculated MW of 101.5 kDa. The protein migrates as 125-150 kDa under reducing (R) condition (SDS-PAGE) due to glycosylation.

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 50 mM Tris, 100 mM Glycine, 25 mM Arginine, 150 mM NaCl, pH7.5 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.

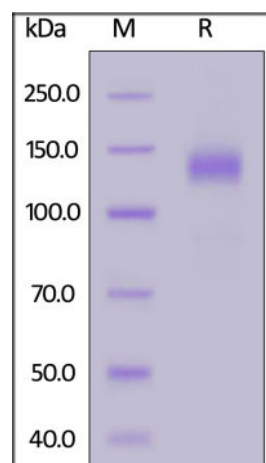
Storage

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:

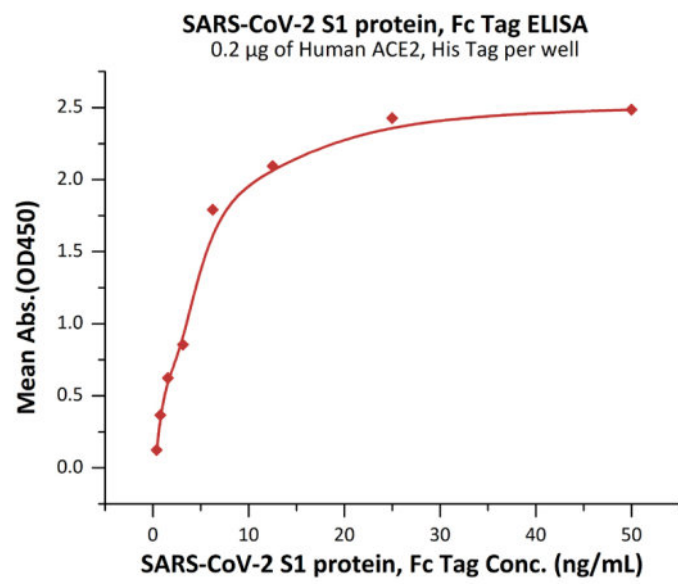
- -20°C to -70°C for 12 months in lyophilized state;
- -70°C for 3 months under sterile conditions after reconstitution.

SDS-PAGE

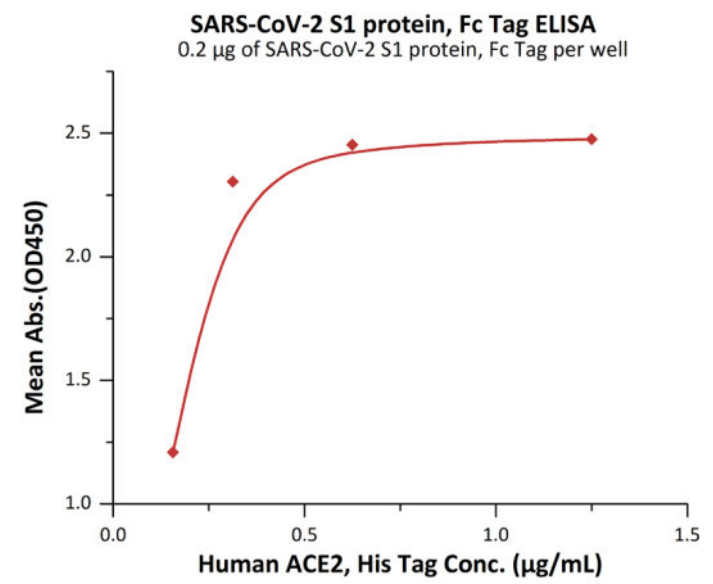
SARS-CoV-2 S1 protein, Fc Tag on SDS-PAGE under reducing (R) condition.

The gel was stained with Coomassie Blue. The purity of the protein is greater than 95%.

Bioactivity-ELISA



Immobilized Human ACE2, His Tag (Cat. No. AC2-H52H8) at 2 µg/mL (100 µL/well) can bind SARS-CoV-2 S1 protein, Fc Tag (Cat. No. S1D-C5253) with a linear range of 0.4-6 ng/mL (QC tested).



Immobilized SARS-CoV-2 S1 protein, Fc Tag (Cat. No. S1D-C5253) at 2 µg/mL (100 µL/well) can bind Human ACE2, His Tag (Cat. No. AC2-H52H8) with a linear range of 0.2-0.3 µg/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.