

Synonym

S1 protein, Spike glycoprotein Subunit1, S glycoprotein Subunit1, Spike protein S1, COVID-19

Source

SARS S1 protein, His Tag (S1N-S52H5) is expressed from human 293 cells (HEK293). It contains AA Ser 14 - Arg 667 (Accession # AAP13567.1).

Predicted N-terminus: Ser 14

Molecular Characterization

S1 protein(Ser 14 - Arg 667)
AAP13567.1 Poly-his

This protein carries a polyhistidine tag at the C-terminus.

The protein has a calculated MW of 74.9 kDa. The protein migrates as 90-116 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 PBS, pH7.4. 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.

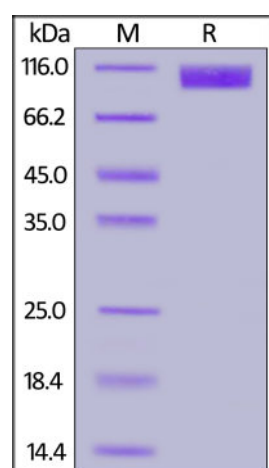
Storage

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

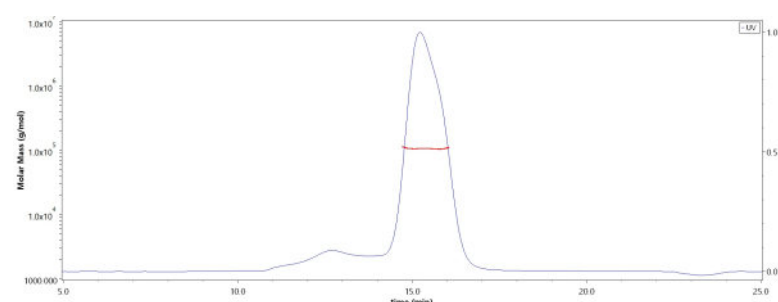
Please avoid repeated freeze-thaw cycles.

This product is stable after storage at:

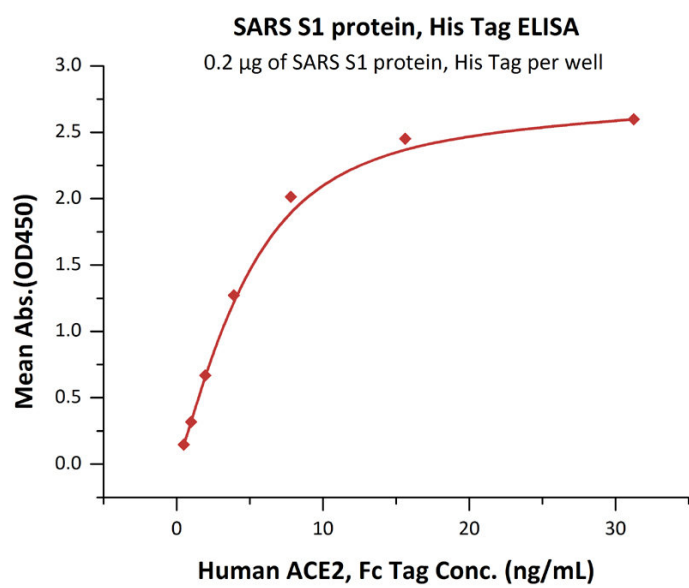
- -20°C to -70°C for 12 months in lyophilized state;
- -70°C for 3 months under sterile conditions after reconstitution.

SDS-PAGE

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

Bioactivity-ELISA**SEC-MALS**

The purity of SARS S1 protein, His Tag (Cat. No. S1N-S52H5) was more than 85% and around 95-115 kDa verified by SEC-MALS.



Immobilized SARS S1 protein, His Tag (Cat. No. [S1N-S52H5](#)) at 2 µg/mL (100 µL/well) can bind Human ACE2, Fc Tag (Cat. No. [AC2-H5257](#)) with a linear range of 0.4-8 ng/mL (QC tested).

Background

Protein S (PROS1) is glycoprotein and expressed in many cell types supporting its reported involvement in multiple biological processes that include coagulation, apoptosis, cancer development and progression, and the innate immune response. Known receptors bind S1 are ACE2, DPP4, CEACAM etc.. It's been reported that 2019-nCoV 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.

References

- (1) [Wan Y, et al. J Virol. 2020. pii: JVI.00127-20.](#)
- (2) [Benvenuto D, et al. J Med Virol. 2020.](#)
- (3) [Chang CY, et al. AMB Express. 2020. 10\(1\):20.](#)