

Synonym

S protein RBD, Spike glycoprotein Receptor-binding domain, S glycoprotein RBD, Spike protein RBD, COVID-19

Source

SARS S protein RBD, His Tag (SPD-S52H6) is expressed from human 293 cells (HEK293). It contains AA Arg 306 - Phe 527 (Accession # AAP13567.1).

Predicted N-terminus: Arg 306

Molecular Characterization

S protein RBD(Arg 306 - Phe 527)
AAP13567.1 Poly-his

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

The protein has a calculated MW of 26.9 kDa. The protein migrates as 33-40 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.

>95% as determined by SEC-MALS.

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.

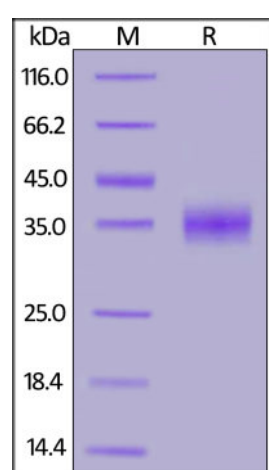
Storage

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

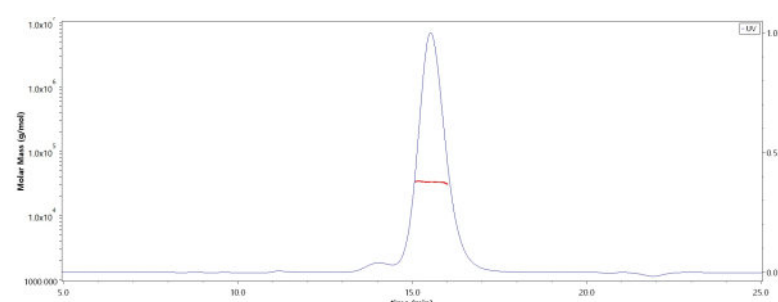
Please avoid repeated freeze-thaw cycles.

This product is stable after storage at:

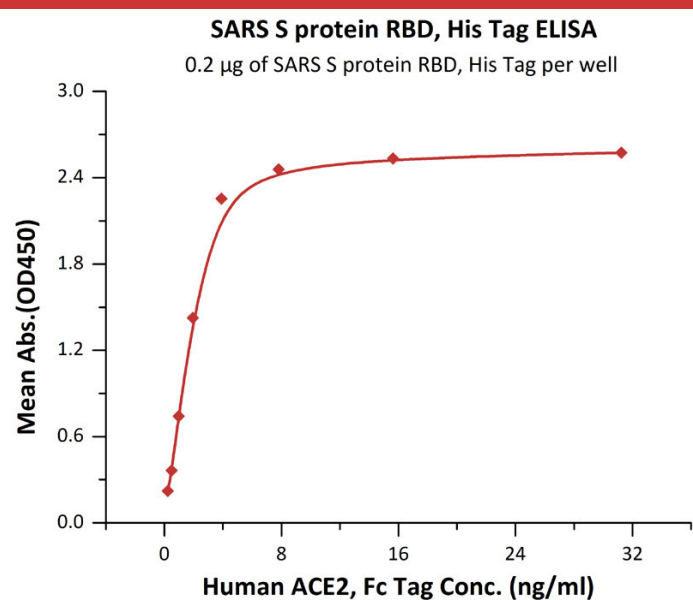
- 20°C to -70°C for 12 months in lyophilized state;
- 70°C for 3 months under sterile conditions after reconstitution.

SDS-PAGE

SARS S protein RBD, 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 90%.

Bioactivity-ELISA**SEC-MALS**

The purity of SARS S protein RBD, His Tag (Cat. No. SPD-S52H6) was more than 95% and around 30-40 kDa verified by SEC-MALS.



Immobilized SARS S protein RBD, His Tag (Cat. No. [SPD-S52H6](#)) at 2 µg/mL (100 µL/well) can bind Human ACE2, Fc Tag (Cat. No. [AC2-H5257](#)) with a linear range of 0.2-4 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.](#)