

Synonym

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

Source

SARS-CoV-2 S protein RBD, His Tag (SPD-C52H3) is expressed from human 293 cells (HEK293). It contains AA Arg 319 - Lys 537 (Accession # [QHD43416.1](#)).

Predicted N-terminus: Arg 319

Molecular Characterization

S protein RBD(Arg 319 - Lys 537) QHD43416.1	Poly-his
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This protein carries a polyhistidine tag at the C-terminus.

The protein has a calculated MW of 26.5 kDa. The protein migrates as 32-35 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.

>90% 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

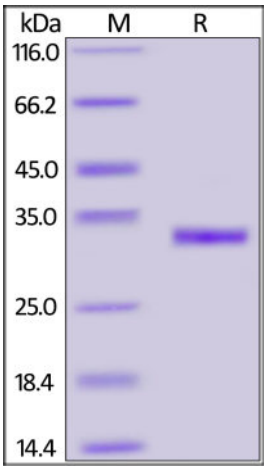
For long term storage, the product should be stored at lyophilized state at -20°C or lower.

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.

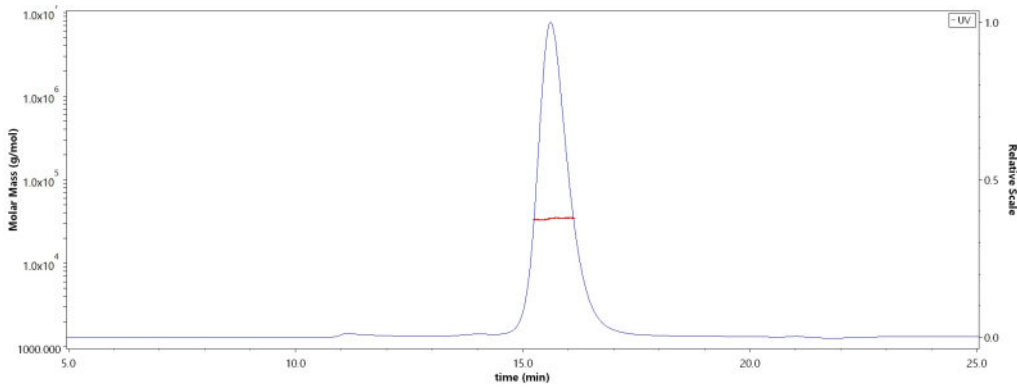
SDS-PAGE



SARS-CoV-2 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 95%.

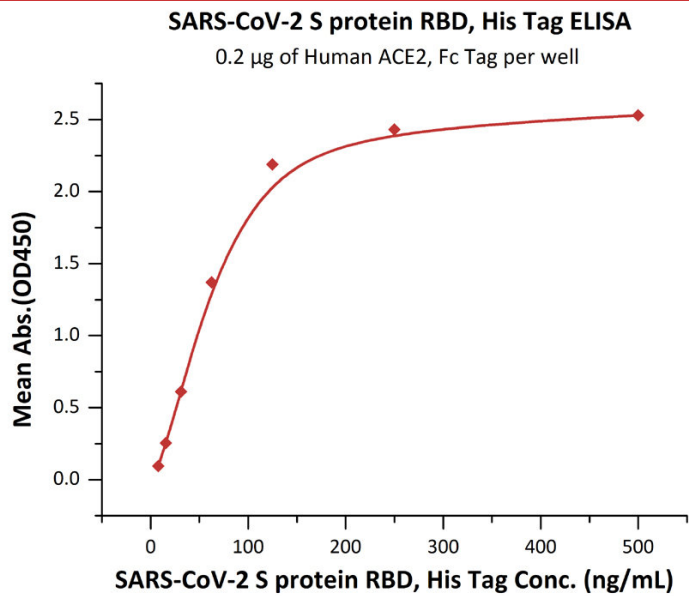
Bioactivity-ELISA

SEC-MALS

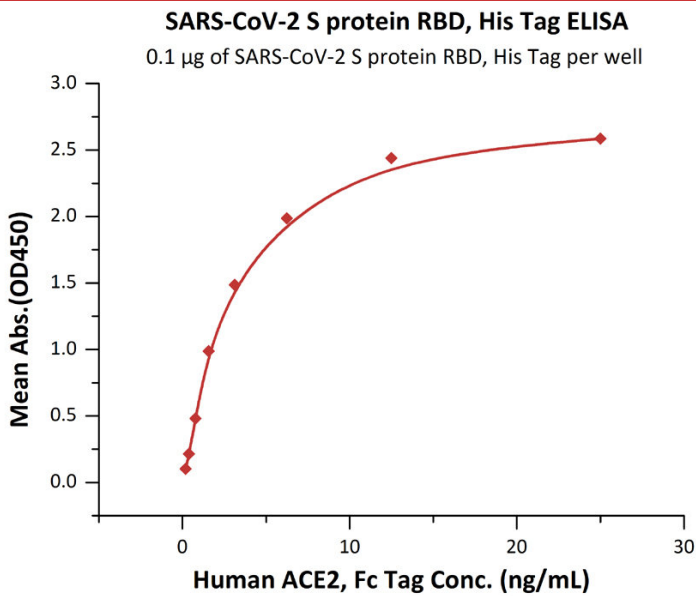


The purity of SARS-CoV-2 S protein RBD, His Tag (Cat. No. SPD-C52H3) was more than 90% and the molecular weight of this protein is around 30-40 kDa verified by SEC-MALS.

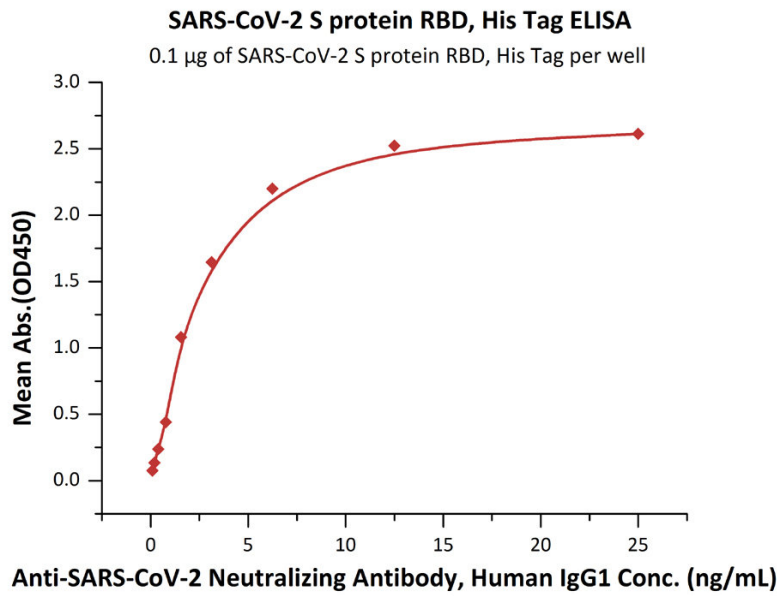
[Report](#)



Immobilized Human ACE2, Fc Tag (Cat. No. [AC2-H5257](#)) at 2 µg/mL (100 µL/well) can bind SARS-CoV-2 S protein RBD, His Tag (Cat. No. [SPD-C52H3](#)) with a linear range of 8-125 ng/mL (QC tested).

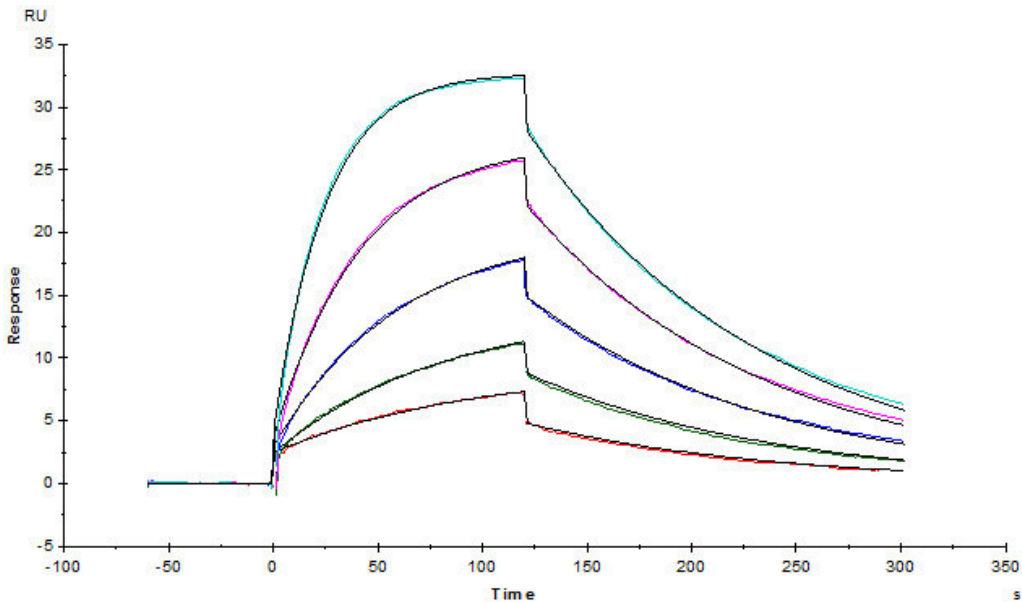


Immobilized SARS-CoV-2 S protein RBD, His Tag (Cat. No. [SPD-C52H3](#)) at 1 µg/mL (100 µL/well) can bind Human ACE2, Fc Tag (Cat. No. [AC2-H5257](#)) with a linear range of 0.2-3 ng/mL (Routinely tested).



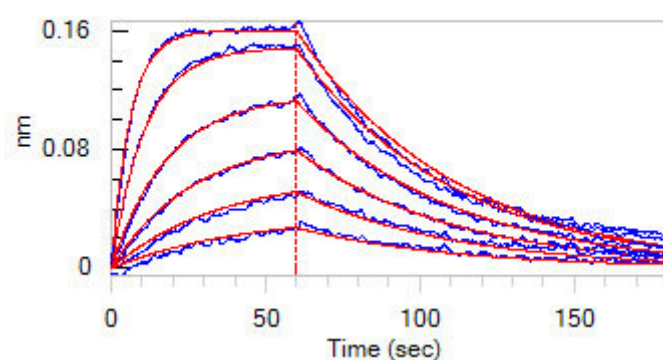
Immobilized SARS-CoV-2 S protein RBD, His Tag (Cat. No. [SPD-C52H3](#)) at 1 µg/mL (100 µL/well) can bind Anti-SARS-CoV-2 Neutralizing Antibody, Human IgG1 (Cat. No. [SAD-S35](#)) with a linear range of 0.1-3 ng/mL (Routinely tested).

Bioactivity-SPR

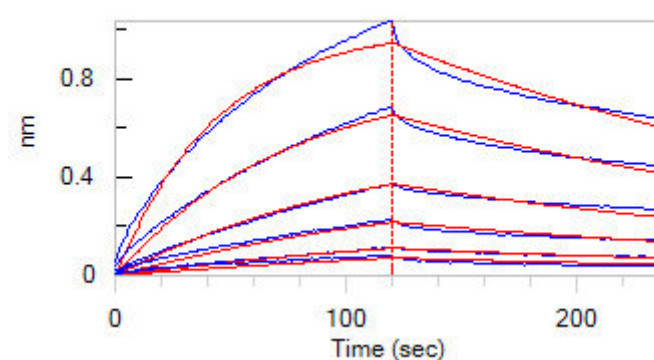


Human ACE2, Fc Tag (Cat. No. [AC2-H5257](#)) captured on CM5 chip via anti-human IgG Fc antibodies surface can bind SARS-CoV-2 S protein RBD, His Tag (Cat. No. [SPD-C52H3](#)) with an affinity constant of 17 nM as determined in a SPR assay (Biacore T200) (Routinely tested).

Bioactivity-BLI



Loaded Human ACE2, Fc Tag (Cat. No. AC2-H5257) on Protein A Biosensor, can bind SARS-CoV-2 S protein RBD, His Tag (Cat. No. SPD-C52H3) with an affinity constant of 34.5 nM as determined in BLI assay (ForteBio Octet Red96e) (Routinely tested).



Loaded Biotinylated Human Neuropilin-1, His,Avitag (Cat. No. NR1-H82E3) on SA Biosensor, can bind SARS-CoV-2 S protein RBD, His Tag (Cat. No. SPD-C52H3) with an affinity constant of 1.01 μ M as determined in BLI assay (ForteBio Octet Red96e)

Background

It's been reported that SARS-CoV-2 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.](#)

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