**ACRo** BIOSYSTEMS

Synonym

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

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
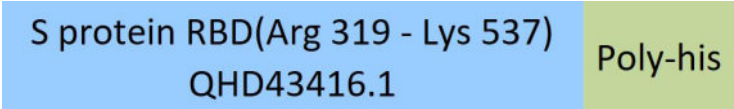
This protein carries a polyhistidine tag at the C-terminus

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 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.
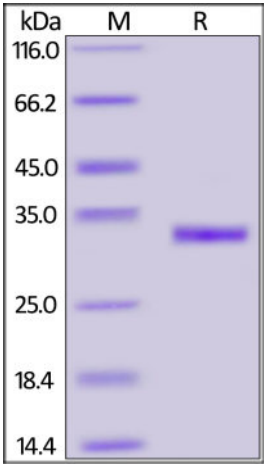
Storage

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;
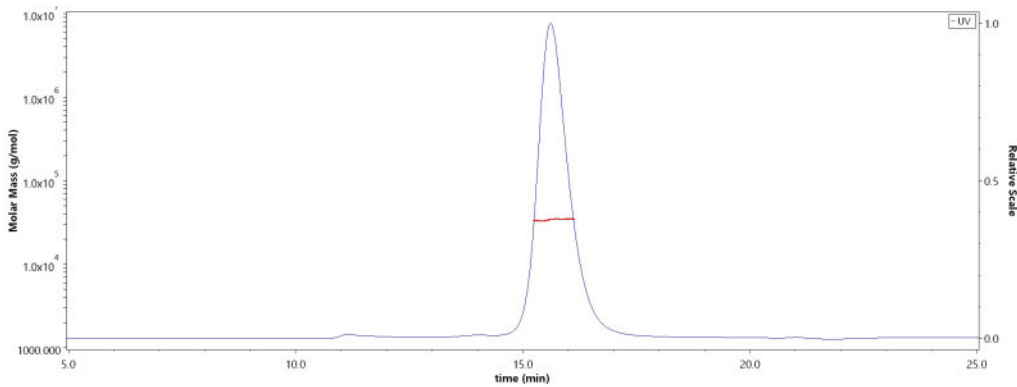- -70°C for 3 months under sterile conditions after reconstitution.

SDS-PAGE

SARS-CoV-2 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%.
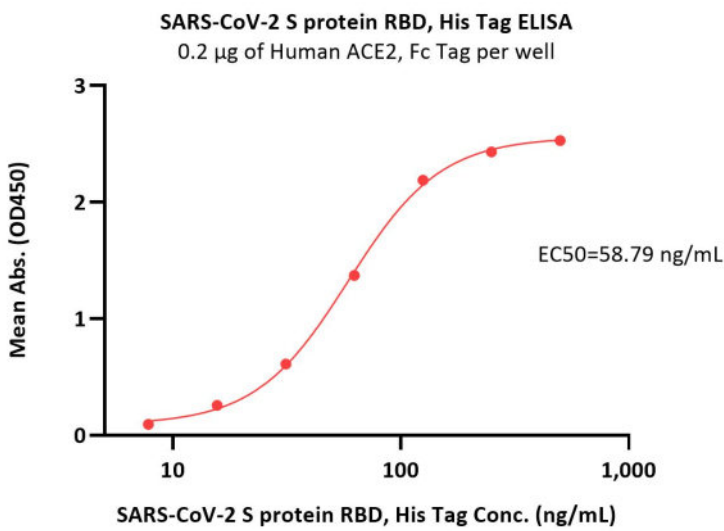
## Bioactivity-ELISA

SEC-MALS

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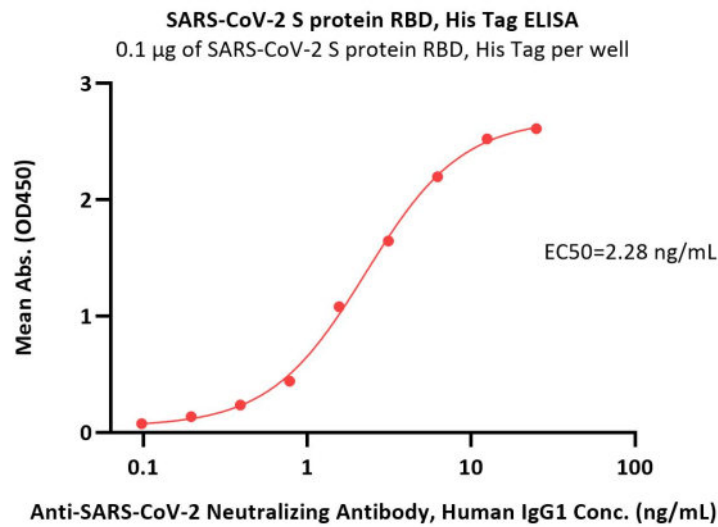Report

SARS-CoV-2 S protein RBD, His Tag ELISA
0.2 μg of Human ACE2, Fc Tag per well

EC50=58.79 ng/mL

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).

SARS-CoV-2 S protein RBD, His Tag ELISA
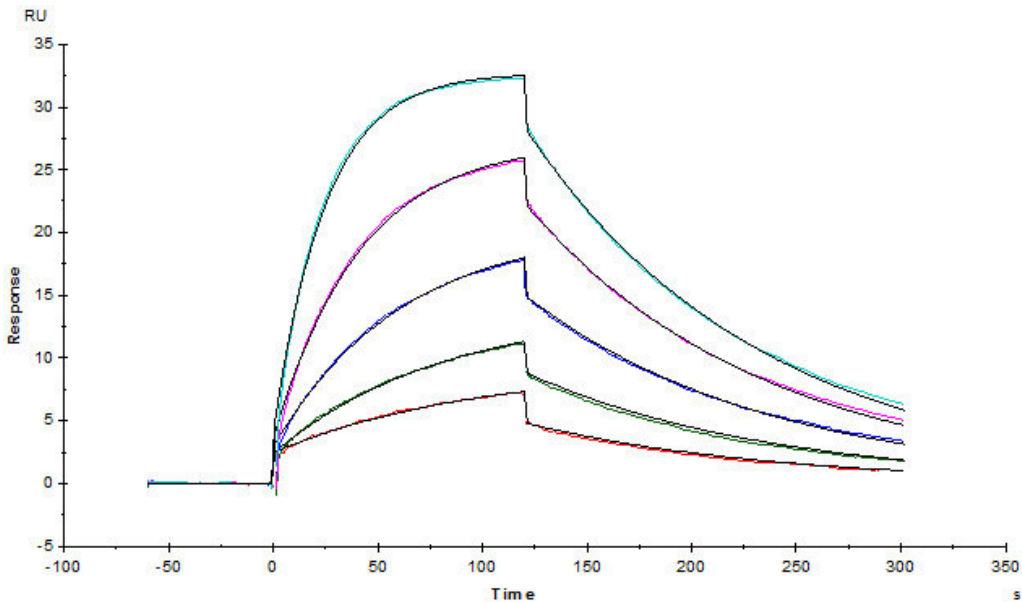0.1 μg of SARS-CoV-2 S protein RBD, His Tag per well

EC50=2.72 ng/mL
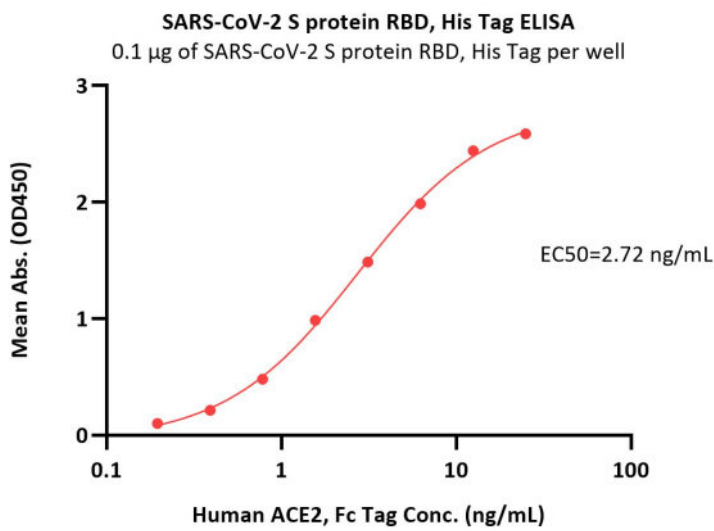
Immobilized SARS-CoV-2 S protein RBD, His Tag (Cat. No. SPD-C52H3) at 1 μg/mL (100 μL/well) can bind Human ACE2, Fc Tag (Cat. No. AC2-H5257) with a linear range of 0.2-3 ng/mL (Routinely tested).

SARS-CoV-2 S protein RBD, His Tag ELISA
0.1 μg of SARS-CoV-2 S protein RBD, His Tag per well

EC50=2.28 ng/mL

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
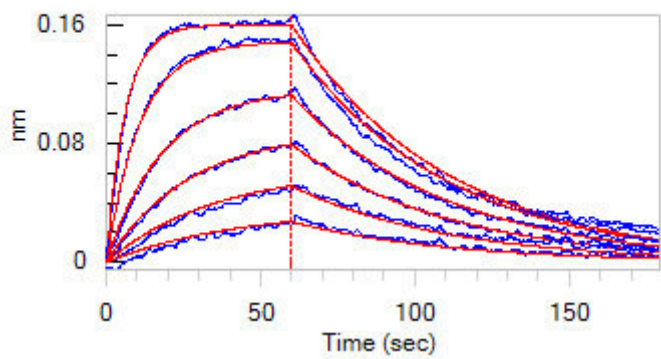
Loaded Human ACE2, Fc Tag (Cat. No. AC2-H5257) on Protein A Biosensor, can bind SARS-CoV-2 S protein RBD, His Tag (Cat. No. SPD-C52H3) with an affinity constant of 34.5 nM as determined in BLI assay (ForteBio Octet Red96e) (Routinely tested).
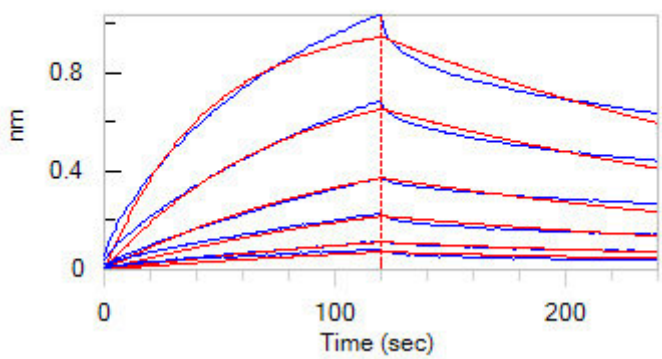
Loaded Biotinylated Human Neuropilin-1, His,Avitag (Cat. No. NR1-H82E3) on SA Biosensor, can bind SARS-CoV-2 S protein RBD, His Tag (Cat. No. SPD-C52H3) with an affinity constant of 1.01 μM as determined in BLI assay (ForteBio Octet Red96e)

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.