

### Synonym

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

### Source

SARS-CoV-2 S protein RBD, Mouse IgG2a Fc Tag(SPD-C5259) is expressed from human 293 cells (HEK293). It contains AA Arg 319 - Phe 541 (Accession # [QHD43416.1](#) ).

Predicted N-terminus: Arg 319

### Molecular Characterization

S protein RBD(Arg 319 - Phe 541) QHD43416.1	mFc(Glu 98 - Lys 330) P01863
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This protein carries a mouse IgG2a Fc tag at the C-terminus

The protein has a calculated MW of 52.0 kDa. The protein migrates as 60-65 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 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

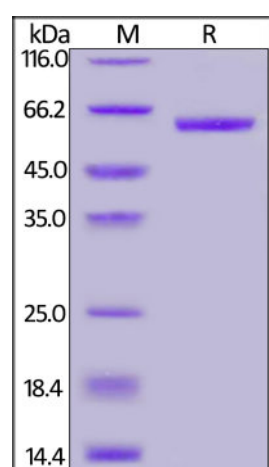
For long term storage, the product should be stored at lyophilized state at -20°C or lower.

*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.

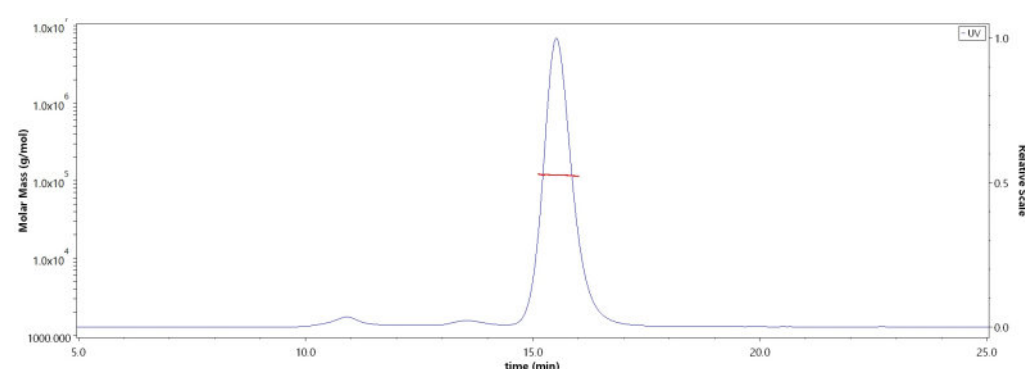
### SDS-PAGE



SARS-CoV-2 S protein RBD, Mouse IgG2a Fc 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%.

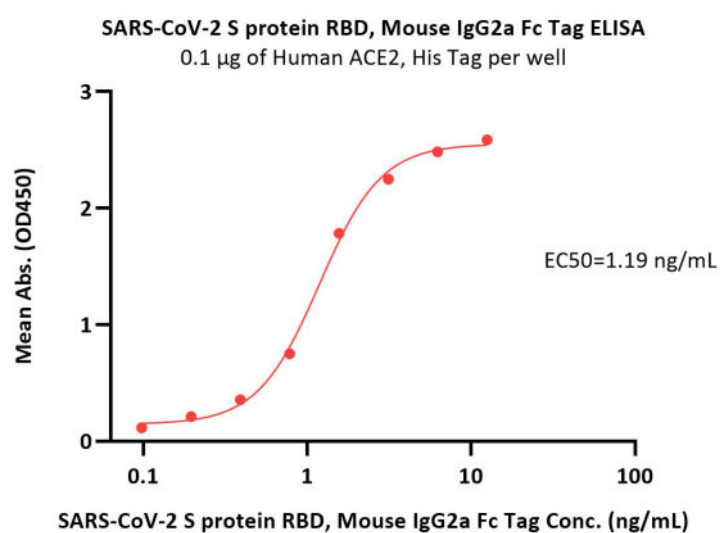
### Bioactivity-ELISA

### SEC-MALS



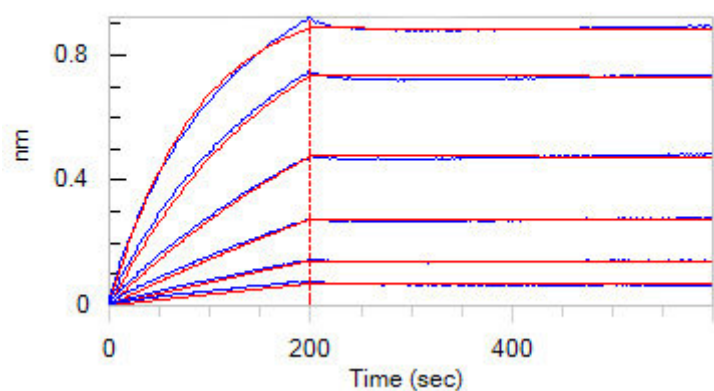
The purity of SARS-CoV-2 S protein RBD, Mouse IgG2a Fc Tag (Cat. No. SPD-C5259) is more than 85% and the molecular weight of this protein is around 105-120 kDa verified by SEC-MALS.

[Report](#)



Immobilized Human ACE2, His Tag (Cat. No. AC2-H52H8) at 1 µg/mL (100 µL/well) can bind SARS-CoV-2 S protein RBD, Mouse IgG2a Fc Tag (Cat. No. SPD-C5259) with a linear range of 0.1-2 ng/mL (QC tested).

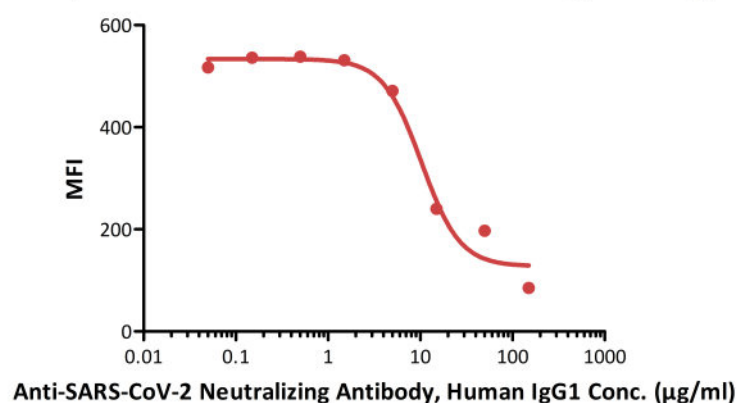
**Bioactivity-BLI**



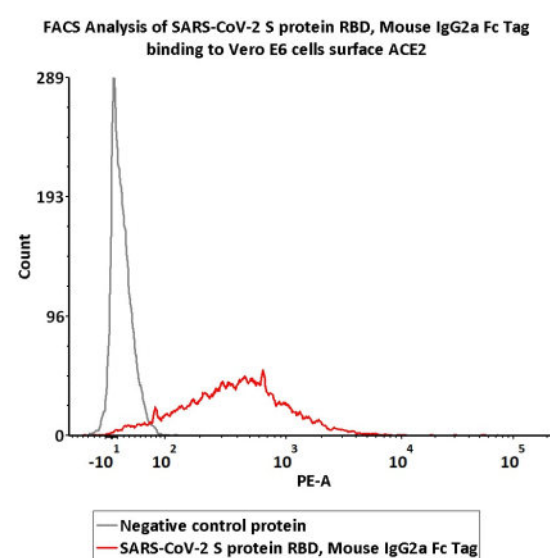
Loaded SARS-CoV-2 S protein RBD, Fc Tag (Cat. No. SPD-C5259) on Protein A Biosensor, can bind Human ACE2, His Tag (Cat. No. AC2-H52H8) with an affinity constant of 0.123nM as determined in BLI assay (ForteBio Octet Red96e)(Routinely tested).

**Bioactivity-FACS**

**Competitive experiment of Anti-SARS-CoV-2 Neutralizing Antibody, Human IgG1**



FACS analysis shows that the binding of SARS-CoV-2 S protein RBD, Mouse IgG2a Fc Tag (Cat. No. SPD-C5259) to Vero E6 cells surface ACE2 was inhibited by increasing concentration of Anti-SARS-CoV-2 Neutralizing Antibody, Human IgG1 (Cat. No. SAD-S35). The concentration of SARS-CoV-2 S protein RBD used is 5µg/ml. The IC50 is 10.33 µg/ml (Routinely tested).



FACS analysis shows that SARS-CoV-2 S protein RBD, Mouse IgG2a Fc Tag (Cat. No. SPD-C5259) can bind to Vero E6 cells surface ACE2. The concentration of SARS-CoV-2 S protein RBD is 5 µg/ml.

## 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](mailto:TechSupport@acrobiosystems.com) if you have any question on this product.