

### Synonym

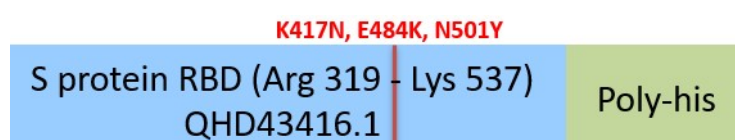
Spike,S protein RBD,Spike glycoprotein Receptor-binding domain,S glycoprotein RBD,Spike protein RBD

### Source

SARS-CoV-2 S protein RBD (K417N, E484K, N501Y), His Tag (SPD-C52Hp) is expressed from human 293 cells (HEK293). It contains AA Arg 319 - Lys 537 (Accession # [QHD43416.1](#) (K417N, E484K, N501Y)). The K417N / E484K / N501Y mutations were identified in the SARS-CoV-2 Beta variant (Pango lineage: B.1.351; other names: 20H/501Y.V2).

Predicted N-terminus: Arg 319

### Molecular Characterization



This protein carries a polyhistidine tag at the C-terminus

The protein has a calculated MW of 26.6 kDa. The protein migrates as 33-35 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

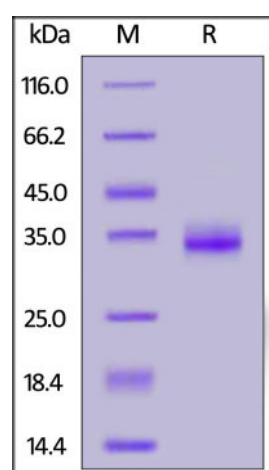
For long term storage, the product should be stored at lyophilized state at -20°C or lower.

*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.

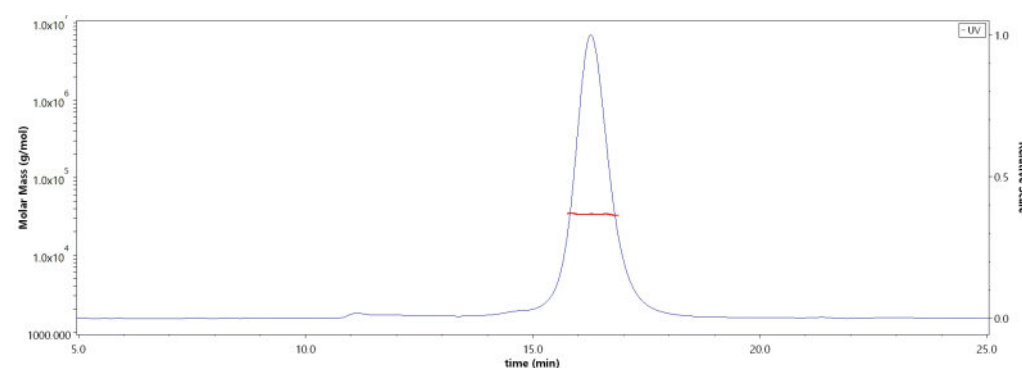
### SDS-PAGE



SARS-CoV-2 S protein RBD (K417N, E484K, N501Y), His Tag on SDS-PAGE under reducing (R) condition. The gel was stained with Coomassie Blue. The purity of the protein is greater than 95%.

### Bioactivity-ELISA

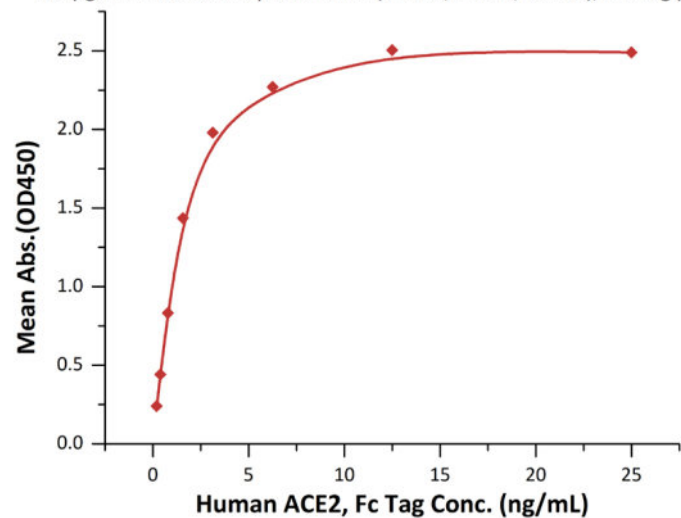
### SEC-MALS



The purity of SARS-CoV-2 S protein RBD (K417N, E484K, N501Y), His Tag (Cat. No. SPD-C52Hp) is more than 90% and the molecular weight of this protein is around 30-40 kDa verified by SEC-MALS.

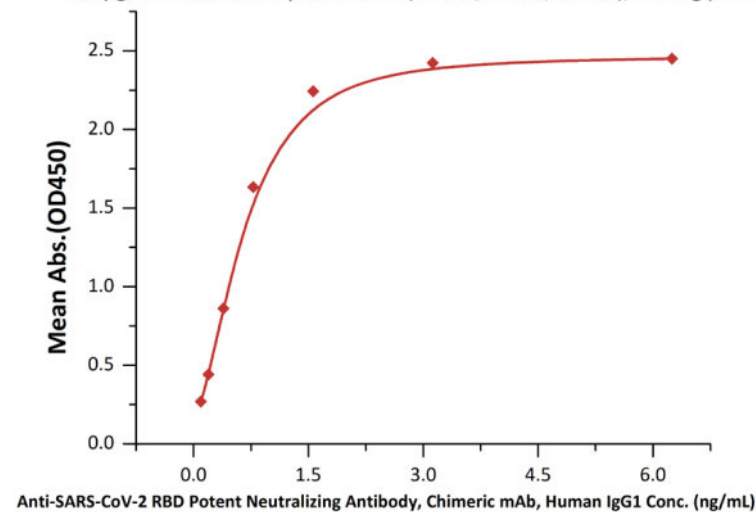
[Report](#)

SARS-CoV-2 S protein RBD (K417N, E484K, N501Y), His Tag ELISA  
0.1 µg of SARS-CoV-2 S protein RBD (K417N, E484K, N501Y), His Tag per well



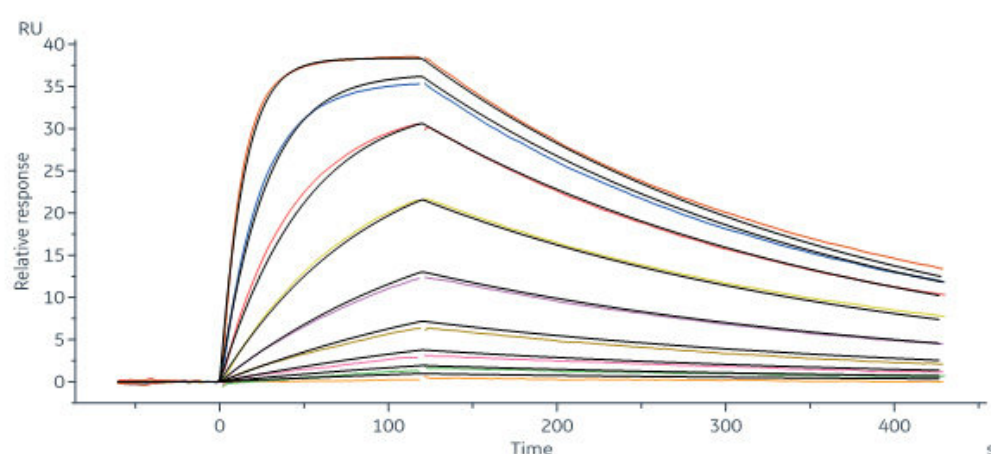
Immobilized SARS-CoV-2 S protein RBD (K417N, E484K, N501Y), His Tag (Cat. No. SPD-C52Hp) at 1 µg/mL (100 µL/well) can bind Human ACE2, Fc Tag (Cat. No. AC2-H5257) with a linear range of 0.2-3 ng/mL (QC tested).

SARS-CoV-2 S protein RBD (K417N, E484K, N501Y), His Tag ELISA  
0.1 µg of SARS-CoV-2 S protein RBD (K417N, E484K, N501Y), His Tag per well



Immobilized SARS-CoV-2 S protein RBD (K417N, E484K, N501Y), His Tag (Cat. No. SPD-C52Hp) at 1 µg/mL (100 µL/well) can bind Anti-SARS-CoV-2 RBD Potent Neutralizing Antibody, Chimeric mAb, Human IgG1 (AM128) (Cat. No. SPD-M128) with a linear range of 0.1-0.8 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 (K417N, E484K, N501Y), His Tag (Cat. No. SPD-C52Hp) with an affinity constant of 3.27 nM as determined in a SPR assay (Biacore 8K) (Routinely tested).

### 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.