



## Synonym

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

## Source

SARS-CoV-2 Spike RBD, His Tag (B.1.1.529/Omicron) (SPD-C522e) is expressed from human 293 cells (HEK293). It contains AA Arg 319 - Lys 537 (Accession # [QHD43416.1](#) (G339D, S371L, S373P, S375F, K417N, N440K, G446S, S477N, T478K, E484A, Q493R, G496S, Q498R, N501Y, Y505H)). The spike mutations are identified on the SARS-CoV-2 Omicron variant (Pango lineage: B.1.1.529; GISAID clade: GR/484A; Nextstrain clade: 21K). Predicted N-terminus: Arg 319

## Molecular Characterization

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

The protein has a calculated MW of 26.8 kDa. The protein migrates as 33-38 kDa under reducing (R) condition (SDS-PAGE) due to glycosylation.

## Endotoxin

Less than 1.0 EU per  $\mu$ g by the LAL method / rFC method.

## Purity

>95% as determined by SDS-PAGE.

>90% as determined by SEC-MALS.

## Formulation

Lyophilized from 0.22  $\mu$ m 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

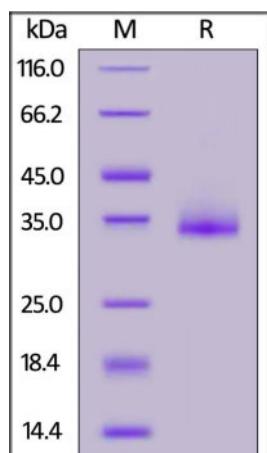
For long term storage, the product should be stored at lyophilized state at -20°C or lower.

*Please avoid repeated freeze-thaw cycles.*

This product is stable after storage at:

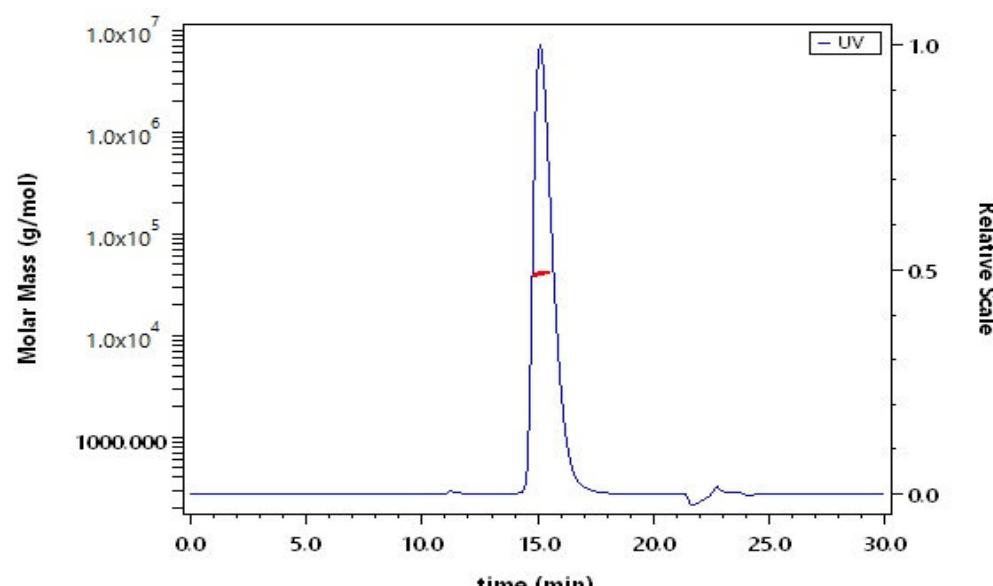
- -20°C to -70°C for 12 months in lyophilized state;
- -70°C for 12 months under sterile conditions after reconstitution.

## SDS-PAGE



SARS-CoV-2 Spike RBD, His Tag (B.1.1.529/Omicron) on SDS-PAGE under reducing (R) condition. The gel was stained with Coomassie Blue. The purity of the protein is greater than 95%.

## SEC-MALS



The purity of SARS-CoV-2 Spike RBD, His Tag (B.1.1.529/Omicron) (Cat. No. SPD-C522e) is more than 90% and the molecular weight of this protein is around 33-48 kDa verified by SEC-MALS.

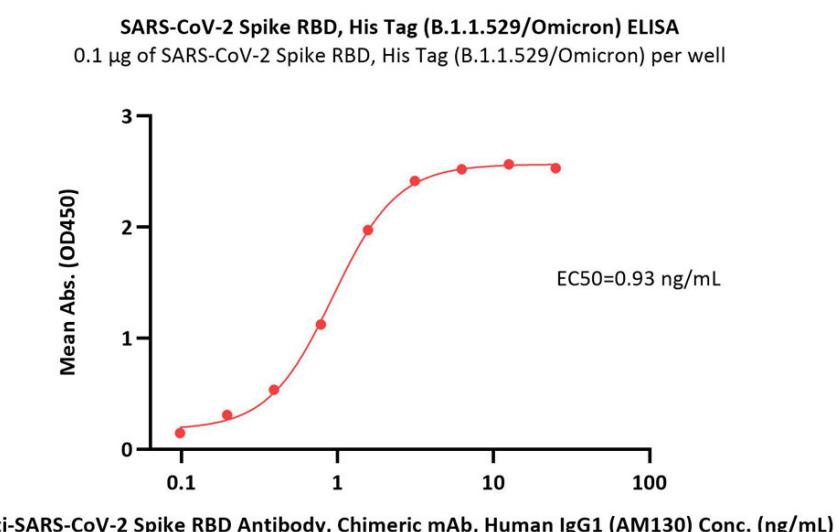
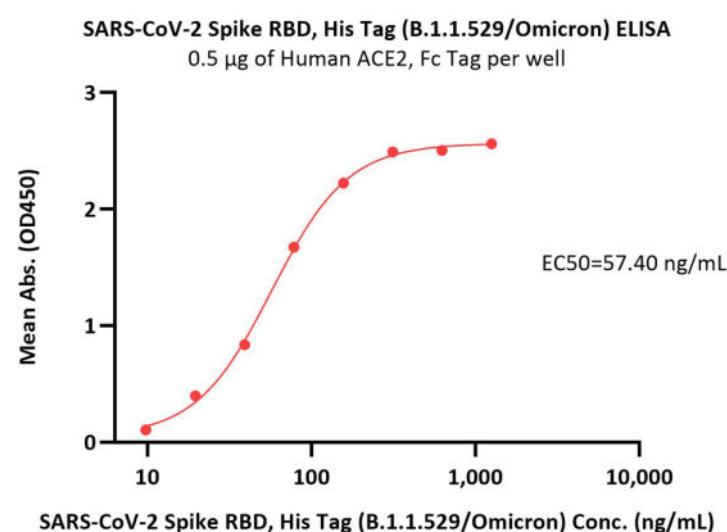
[Report](#)

## Bioactivity-ELISA

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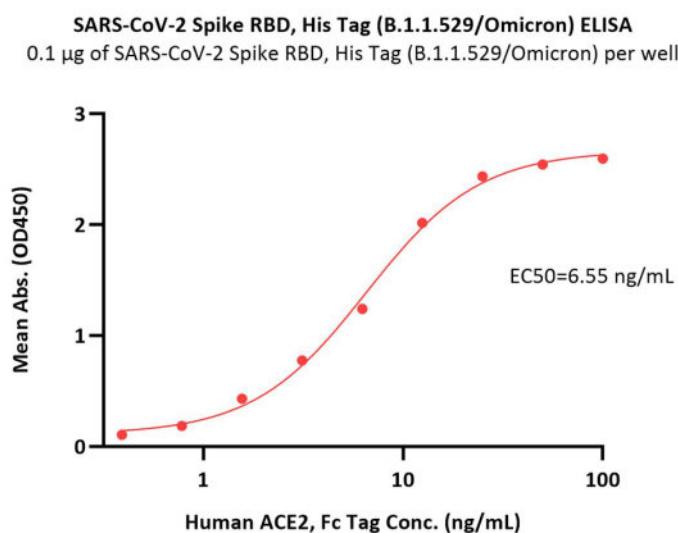


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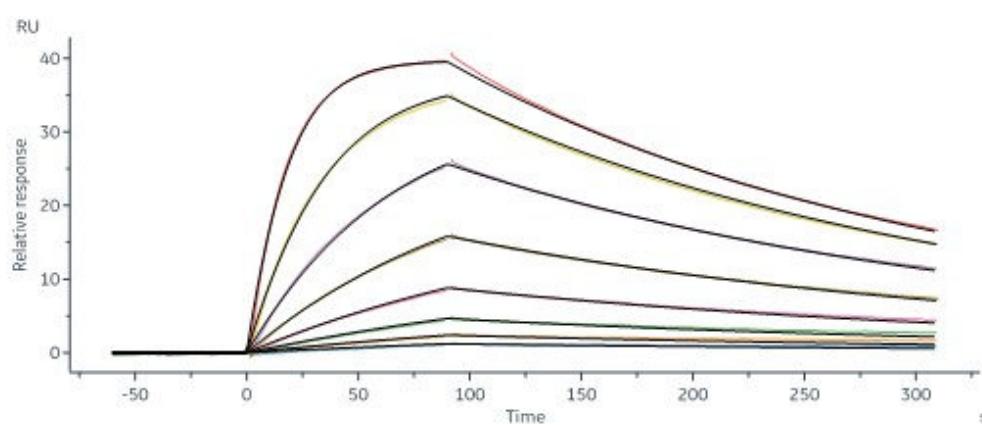
Immobilized Human ACE2, Fc Tag (Cat. No. AC2-H5257) at 5 µg/mL (100 µL/well) can bind SARS-CoV-2 Spike RBD, His Tag (B.1.1.529/Omicron) (Cat. No. SPD-C522e) with a linear range of 10-156 ng/mL (QC tested).

Immobilized SARS-CoV-2 Spike RBD, His Tag (B.1.1.529/Omicron) (Cat. No. SPD-C522e) at 1 µg/mL (100 µL/well) can bind Anti-SARS-CoV-2 Spike RBD Antibody, Chimeric mAb, Human IgG1 (AM130) (Cat. No. S1N-M13A1) with a linear range of 0.1-3 ng/mL (Routinely tested).



Immobilized SARS-CoV-2 Spike RBD, His Tag (B.1.1.529/Omicron) (Cat. No. SPD-C522e) at 1 µg/mL (100 µL/well) can bind Human ACE2, Fc Tag (Cat. No. AC2-H5257) with a linear range of 0.4-13 ng/mL (Routinely tested).

## Bioactivity-SPR



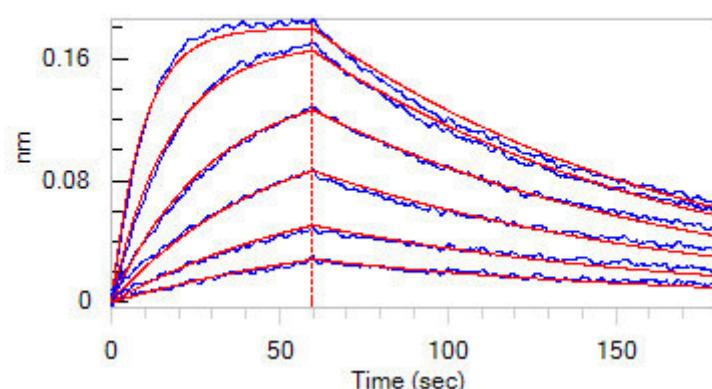
Human ACE2, Fc Tag (Cat. No. AC2-H5257) captured on CM5 chip via human IgG Fc antibody can bind SARS-CoV-2 Spike RBD, His Tag (B.1.1.529/Omicron) (MALS verified) (Cat. No. SPD-C522e) with an affinity constant of 4.56 nM as determined in a SPR assay (Biacore 8K).

## Bioactivity-BLI

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Loaded Human ACE2, Fc Tag (Cat. No. AC2-H5257) on Protein A Biosensor, can bind SARS-CoV-2 Spike RBD, His Tag (B.1.1.529/Omicron) (MALS verified) (Cat. No. SPD-C522e) with an affinity constant of 11.4 nM 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.

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