SARS-CoV-2 S protein RBD (N501Y), Fc Tag (MALS verified)

Catalog # SPD-C5253

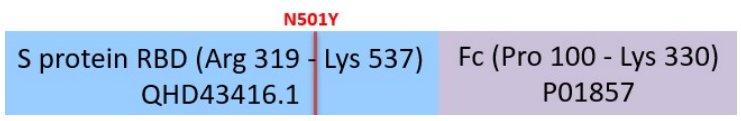
Synonym

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

Source

SARS-CoV-2 S protein RBD (N501Y), Fc Tag (SPD-C5253) is expressed from human 293 cells (HEK293). It contains AA Arg 319 - Lys 537 (Accession # QHD43416.1 (N501Y)). The N501Y mutaion was identified in multiple SARS-CoV-2 Variants of Concerns (VOCs), i.e. the Alpha variant (Pango lineage: B.1.1.7; other names: 20I/501Y.V1 or VOC 202012/01), the Beta variant (Pango lineage: B.1.351; other names: 20H/501Y.V2), the Gamma variant (Pango lineage: P.1; other names: 20J/501Y.V3).
Predicted N-terminus: Arg 319

Molecular Characterization



This protein carries a human IgG1 Fc tag at the C-terminus.

The protein has a calculated MW of 51.1 kDa. The protein migrates as 55-60 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 50 mM Tris, 100 mM Glycine, 25 mM Arginine, 150 mM NaCl, pH7.5 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

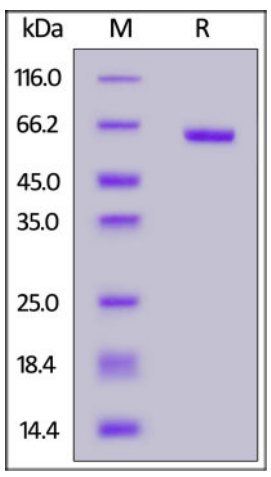
For long term storage, the product should be stored at lyophilized state at -20°C or lower.

Please avoid repeated freeze-thaw cycles.

This product is stable after storage at:

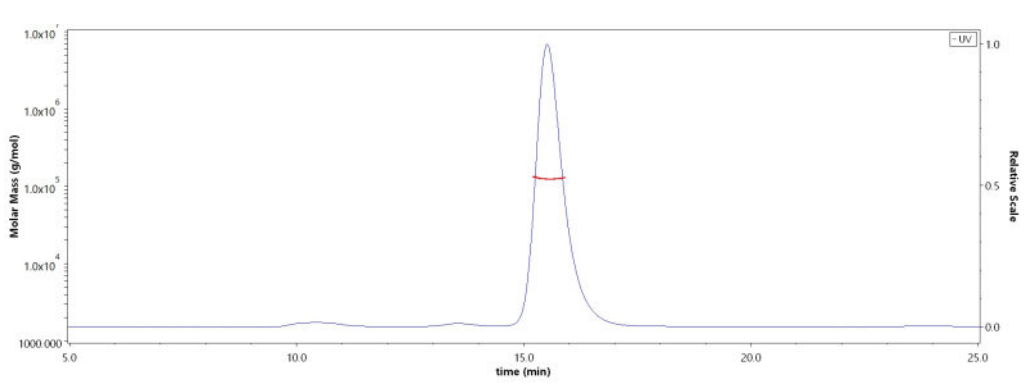
- -20°C to -70°C for 12 months in lyophilized state;
- -70°C for 3 months under sterile conditions after reconstitution.

SDS-PAGE



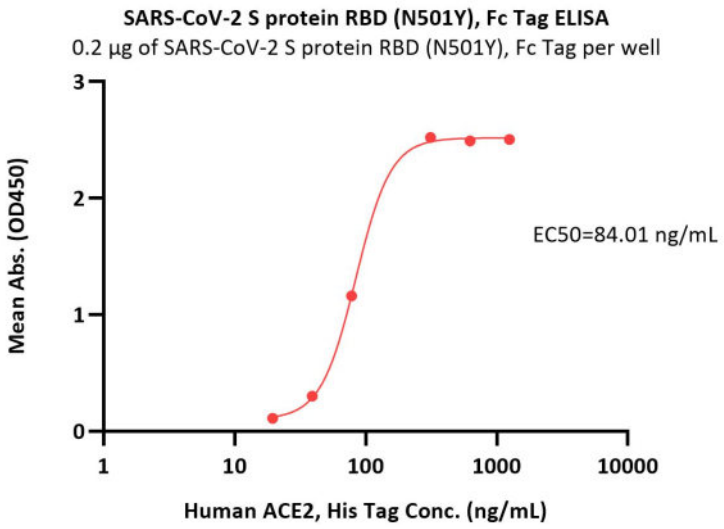
SARS-CoV-2 S protein RBD (N501Y), Fc Tag on SDS-PAGE under reducing (R) condition. The gel was stained with Coomassie Blue. The purity of the protein is greater than 95%.

SEC-MALS

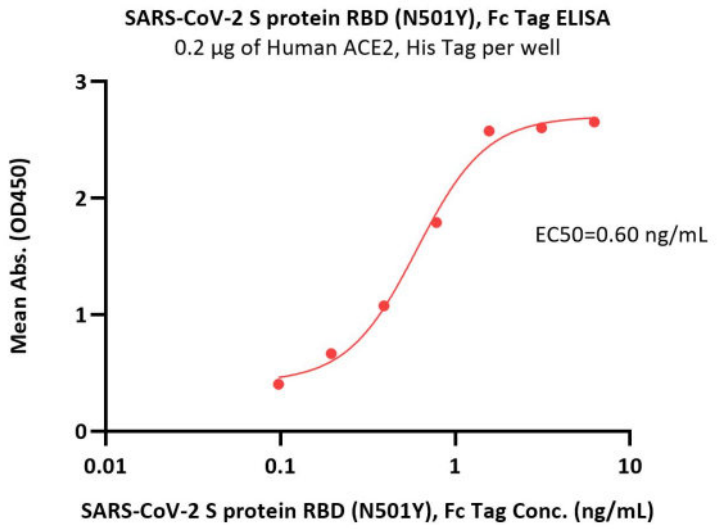


The purity of SARS-CoV-2 S protein RBD (N501Y), Fc Tag (Cat. No. SPD-C5253) is more than 90% and the molecular weight of this protein is around 115-135 kDa verified by SEC-MALS.
Report

Bioactivity-ELISA

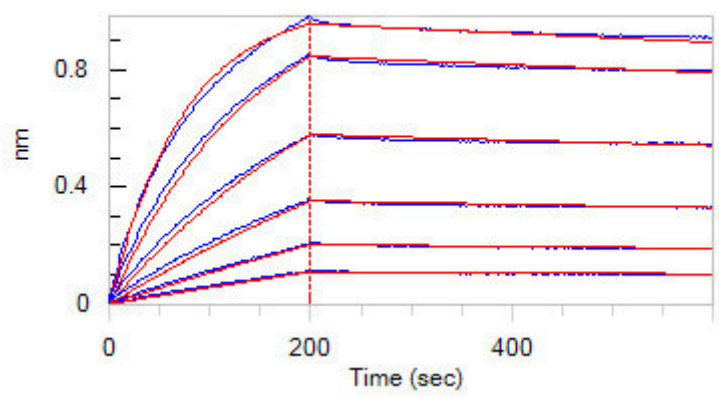


Immobilized SARS-CoV-2 S protein RBD (N501Y), Fc Tag (Cat. No. SPD-C5253) at 2 μg/mL (100 μL/well) can bind Human ACE2, His Tag (Cat. No. AC2-H52H8) with a linear range of 39-156 ng/mL (QC tested).



Immobilized Human ACE2, His Tag (Cat. No. AC2-H52H8) at 2 μg/mL (100 μL/well) can bind SARS-CoV-2 S protein RBD (N501Y), Fc Tag (Cat. No. SPD-C5253) with a linear range of 0.1-0.8 ng/mL (Routinely tested).

Bioactivity-BLI



Loaded SARS-CoV-2 S protein RBD, Fc Tag (Cat. No. SPD-C5253) on Protein A Biosensor, can bind Human ACE2, His Tag (Cat. No. AC2-H52H8) with an affinity constant of 1.56 nM as determined in BLI assay (ForteBio Octet Red96e)(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