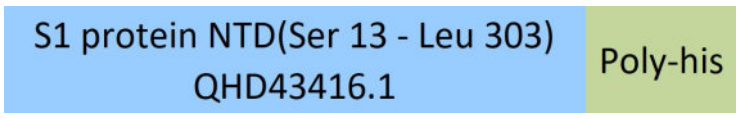
Synonym

S1 protein NTD,Spike protein S1 NTD,BetaCoV S1-NTD,COVID-19

Source

SARS-CoV-2 S1 protein NTD, His Tag (S1D-C52H6) is expressed from human 293 cells (HEK293). It contains AA Ser 13 - Leu 303 (Accession # QHD43416.1).
Predicted N-terminus: Ser 13

Molecular Characterization



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

The protein has a calculated MW of 34.9 kDa. The protein migrates as 45-65 kDa under reducing (R) condition (SDS-PAGE) due to Glycosylation.

Endotoxin

Less than 1.0 EU per μg by the LAL method.

Purity

>90% as determined by SDS-PAGE.

Formulation

Lyophilized from 0.22 μm filtered solution in PBS,pH7.3 . Normally trehalose is added as protectant before lyophilization.

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

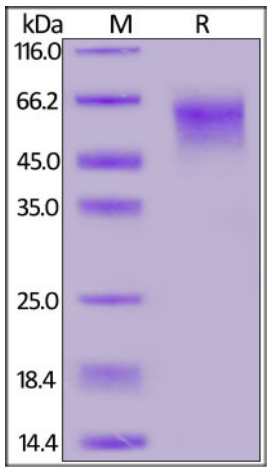
For long term storage, the product should be stored at lyophilized state at -20°C or lower.

Please avoid repeated freeze-thaw cycles.

This product is stable after storage at:

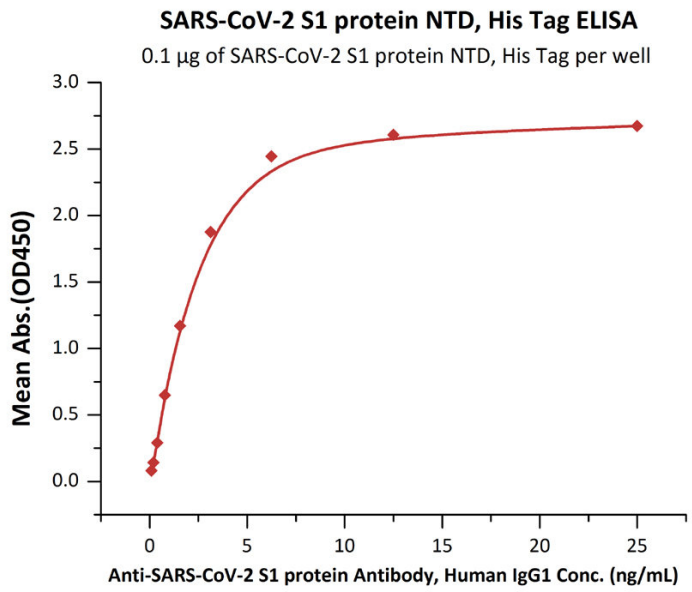
- -20°C to -70°C for 12 months in lyophilized state;
- -70°C for 3 months under sterile conditions after reconstitution.

SDS-PAGE



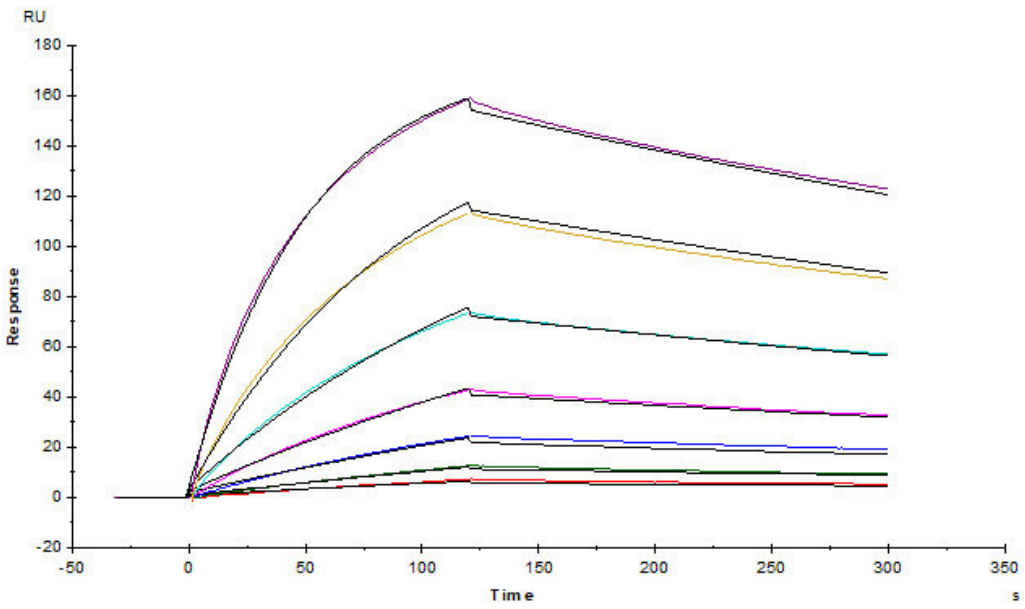
SARS-CoV-2 S1 protein NTD, His Tag on SDS-PAGE under reducing (R) condition. The gel was stained overnight with Coomassie Blue. The purity of the protein is greater than 90%.

Bioactivity-ELISA



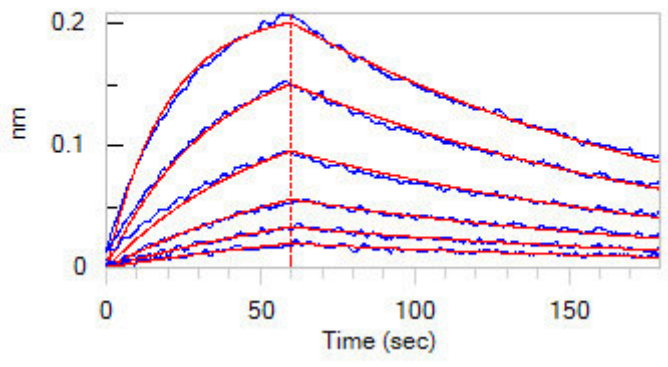
Immobilized SARS-CoV-2 S1 protein NTD, His Tag (Cat. No. S1D-C52H6) at 1 μg/mL (100 μL/well) can bind Anti-SARS-CoV-2 S1 protein Antibody, human IgG1 with a linear range of 0.1-3 ng/mL (QC tested).

Bioactivity-SPR



Anti-SARS-CoV-2 S1 protein Antibody captured on CM5 chip via Anti-human IgG Fc antibodies surface can bind SARS-CoV-2 S1 protein NTD, His Tag (Cat. No. S1D-C52H6) with an affinity constant of 74.6 nM as determined in a SPR assay (Biacore T200) (Routinely tested).

Bioactivity-BLI



Loaded Anti-SARS-CoV-2 Spike NTD Antibody, Chimeric mAb (Cat. No. SPD-M121) on AHC Biosensor, can bind SARS-CoV-2 S1 protein NTD, His Tag (Cat. No. S1D-C52H6) with an affinity constant of 39.8 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.

References

(1) Wan Y, et al. J Virol. 2020. pii: JVI.00127-20.

(2) Benvenuto D, et al. J Med Virol. 2020.

(3) Chang CY, et al. AMB Express. 2020. 10(1):20.

Please contact us via TechSupport@acrobiosystems.com if you have any question on this product.