SARS-CoV Spike S1+S2 ECD-His Recombinant Protein (S577A, Isolate Tor2)

Catalog Number: 40634-V08B

Sino Biological
Biological Solution Specialist

General Information

Gene Name Synonym:

coronavirus s1; coronavirus s2; coronavirus spike; cov spike; ncov RBD; ncov s1; ncov s2; ncov spike; novel coronavirus RBD; novel coronavirus s1; novel coronavirus s2; novel coronavirus spike; RBD; S1; s2; Spike RBD

Protein Construction:

A DNA sequence encoding the full-lenght ECD of SARS-CoV (isolate: Tor2) spike (NP_828851.1) (Met1-Pro1195) was expressed with a C-terminal polyhistidine tag.

**Source:**   SARS

Expression Host: Baculovirus-Insect Cells

QC Testing

Purity: > 90 % as determined by SDS-PAGE.

Bio Activity：

Measured by its binding ability in a functional ELISA. Immobilized ACE2 Protein, Human, Recombinant (mFc Tag)(10108-H05H) at 2 µg/mL (100 µL/well) can bind SARS-CoV Spike S1+S2 ECD-His Recombinant Protein (S577A, Isolate Tor2)(40634-V08B),the EC_{50} of SARS-CoV Spike S1+S2 ECD-His Recombinant Protein (S577A, Isolate Tor2)(40634-V08B) is 300-900 ng/mL.
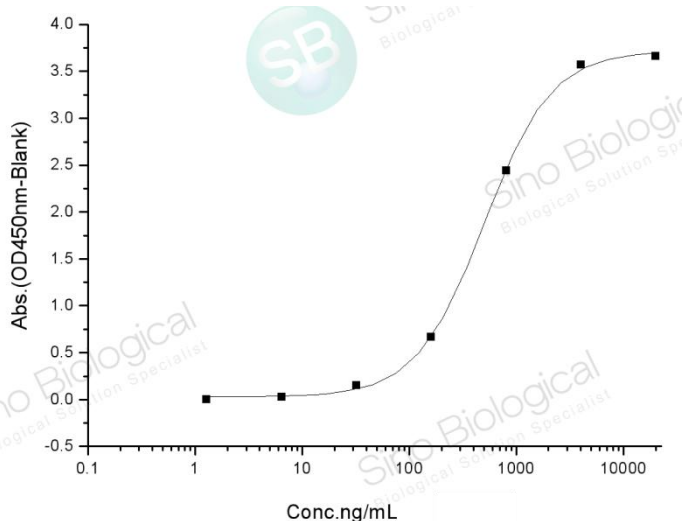
Endotoxin:

< 1.0 EU per µg protein as determined by the LAL method.

Predicted N terminal: Ser14

Molecular Mass:

The recombinant SARS-CoV (isolate: Tor2) spike S1+S2 ECD consists of 1193 amino acids and predicts a molecular mass of 132.58 kDa.

Formulation:

Lyophilized from sterile 20mM PB, 300mM NaCl, pH 7.0, 10% glycerol

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

Usage Guide

Stability & Storage:

Samples are stable for twelve months from date of receipt at -20℃ to -80℃.

Store it under sterile conditions at -20℃ to -80℃ upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:

Protein Description

The spike (S) glycoprotein of coronaviruses contains protrusions that will only bind to certain receptors on the host cell. Known receptors bind S1 are ACE2, angiotensin-converting enzyme 2; DPP4, dipeptidyl peptidase-4; APN, aminopeptidase N; CEACAM, carcinoembryonic antigen-related cell adhesion molecule 1; Sia, sialic acid; O-ac Sia, O-acetylated sialic acid. The spike is essential for both host specificity and viral infectivity. The term 'peplomer' is typically used to refer to a grouping of heterologous proteins on the virus surface that function together. The spike (S) glycoprotein of coronaviruses is known to be essential in the binding of the virus to the host cell at the advent of the infection process. It's been reported that SARS-CoV-2 (COVID-19 coronavirus, 2019-nCoV) 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.

The main functions for the Spike protein are summarized as: Mediate receptor binding and membrane fusion; Defines the range of the hosts and specificity of the virus; Main component to bind with the neutralizing antibody; Key target for vaccine design; Can be transmitted between different hosts through gene recombination or mutation of the receptor binding domain (RBD), leading to a higher mortality rate.

References

1.Shen S, et al. (2007) Expression, glycosylation, and modification of the spike (S) glycoprotein of SARS CoV. Methods Mol Biol. 379: 127-35.
2.Du L, et al. (2009) The spike protein of SARS-CoV--a target for vaccine and therapeutic development. Nat Rev Microbiol. 7 (3): 226-36.
3.Xiao X, et al. (2004) The SARS-CoV S glycoprotein. Cell Mol Life Sci. 61 (19-20): 2428-30.