

RP01309

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Recombinant SARS-CoV Spike S1 Protein

Catalog No.: RP01309

Recombinant

Sequence Information

Species	Gene ID	Swiss Prot
SARS-CoV	1489668	Q5DIC5

Tags

C-His

Synonyms

Spike;Spike RBD;Spike S1

Product Information

Source	Purification
HEK293 cells	> 90% by SDS-PAGE.

Endotoxin

< 1.0 EU/μg of the protein by LAL method.

Formulation

Lyophilized from a 0.22 μm filtered solution of PBS, pH 7.4.

Reconstitution

Centrifuge the vial before opening. Reconstitute to a concentration of 0.1-0.5 mg/mL in sterile distilled water. Avoid vortex or vigorously pipetting the protein. For long term storage, it is recommended to add a carrier protein or stabilizer (e.g. 0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose), and aliquot the reconstituted protein solution to minimize free-thaw cycles.

Background

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.

Basic Information

Description

Recombinant SARS-CoV Spike S1 Protein is produced by HEK293 cells expression system. The target protein is expressed with sequence (Ser14-Arg667) of sars-cov Spike S1 (Accession #AAX16192.1) fused with an 6xHis tag at the C-terminus.

Bio-Activity

Measured by its binding ability in a functional ELISA. Immobilized SARS-CoV Spike S1 at 2μg/mL (100μL/well) can bind Human ACE2 (Catalog: RP01275) with a linear range of 0.05-11.55 ng/mL.

Storage

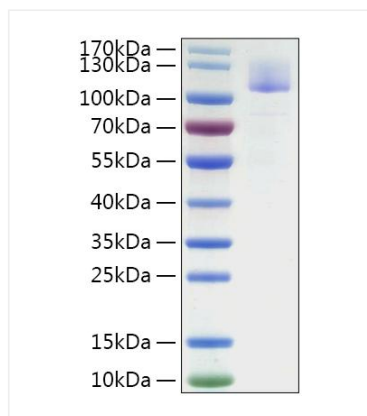
Store the lyophilized protein at -20°C to -80°C for long term. After reconstitution, the protein solution is stable at -20°C for 3 months, at 2-8°C for up to 1 week. Avoid repeated freeze/thaw cycles.

Contact

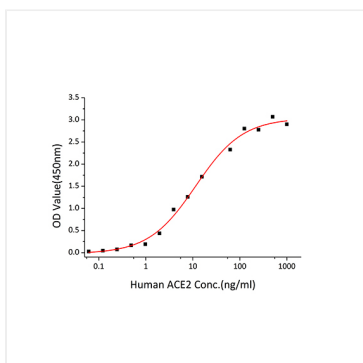


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Validation Data



Recombinant SARS-CoV Spike S1 Protein was determined by SDS-PAGE with Coomassie Blue, showing a band at 110-130 kDa.



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