

Recombinant SARS-CoV-2 Spike RBD (L452R, F490S) Protein, His-tagged

Cat. No. S-580S **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant SARS-CoV-2 Spike RBD (YP_009724390.1, with mutations L452R, F490S) (Arg319-Phe541) was expressed in HEK293 cell with a polyhistidine tag at the C-terminus. The mutations were identified in the SARS-CoV-2 variant (known as variant C.37) which emerged in the Peru.
Species	SARS-CoV-2
Source	HEK293
ProteinLength	319-541
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

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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.

Predicted N Terminal	Arg 319
Molecular Mass	The recombinant SARS-CoV-2 Spike RBD consists of 234 amino acids and predicts a molecular mass of 26.50 kDa. As a result of glycosylation, it migrates as an approximately 33.47 kDa band in SDS-PAGE under reducing conditions.
Endotoxin	< 1.0 EU/μg protein as determined by the LAL method.
Purity	> 95 % as determined by SDS-PAGE.
Storage	Samples are stable for up to twelve months from date of receipt at -20 to -80 centigrade. Store it under sterile conditions at -20 to -80 centigrade. It is recommended that the protein be aliquoted for optimal storage. Avoid repeated freeze-thaw cycles.
Storage Buffer	Lyophilized from sterile PBS, pH 7.4. Normally 5 % - 8 % trehalose, mannitol and 0.01 % Tween80 are added as protectants before lyophilization.

GENE INFORMATION

Gene Name	S surface glycoprotein [Severe acute respiratory syndrome coronavirus 2]
Official Symbol	S
Synonyms	S; surface glycoprotein; spike glycoprotein; surface glycoprotein; structural protein; spike protein
Gene ID	43740568
mRNA Refseq	MN908947
Protein Refseq	YP_009724390

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