Active Recombinant COVID-19 Spike RBD protein

Cat. No. Spike-233V **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant COVID-19 Spike RBD protein (Arg319-Phe541) was expressed in human 293 cells (HEK293).
Species	Sars-CoV-2
Source	HEK293
ProteinLength	Arg319-Phe541
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 COVID-19 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

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	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	Arg319
Form	Lyophilized from sterile PBS, pH 7.4, 5% trehalose, 5% mannitol and 0.01% Tween80.
Bio-activity	Measured by its binding ability in a functional ELISA. Immobilized S3-COVID-19-RBD at 2 μg/mL (100 μL/well) can bind ACE2 Protein, Human, Recombinant (mFc Tag), the EC50 of ACE2 Protein, Human, Recombinant (mFc Tag) is 20-80 ng/mL.
Molecular Mass	The recombinant COVID-19 Spike Protein (RBD) consists of 223 amino acids and predicts a molecular mass of 25.1 kDa.
Endotoxin	< 1.0 EU per μg protein as determined by the LAL method.
Purity	> 90% as determined by SDS-PAGE.
Stability	Samples are stable for up to twelve months from date of receipt at -20 centigrade to -80 centigrade.
Storage	Store it under sterile conditions at -20 centigrade to -80 centigrade. It is recommended that the protein be aliquoted for optimal storage. Avoid repeated freeze-thaw cycles.
Reconstitution	It is recommended that sterile water be added to the vial to prepare a stock solution of

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	0.25 mg/ml. Centrifuge the vial at 4℃ before opening to recover the entire contents.
Shipping	In general, recombinant proteins are provided as lyophilized powder which are shipped at ambient temperature. Bulk packages of recombinant proteins are provided as frozen liquid. They are shipped out with blue ice unless customers require otherwise.

GENE INFORMATION

Gene Name	S
Official Symbol	S
Synonyms	spike glycoprotein
Gene ID	43740568
Protein Refseq	YP_009724390.1
UniProt ID	P0DTC2

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