

Active Recombinant COVID-19 Spike protein RBD, Fc-tagged

Cat. No. Spike-188V **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant COVID-19 Spike protein RBD (Arg319-Phe541), fused to a Fc region of mouse IgG1 at the C-terminus, 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 (COVID-19 coronavirus, 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

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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	Arg319
Form	Lyophilized from sterile PBS, pH 7.4, 5% trehalose, 5% mannitol and 0.01% Tween80.
Bio-activity	1. Measured by its binding ability in a functional ELISA. Immobilized human ACE2 protein (His tag) at 2µg/mL (100µL/well) can bind COVID-19 Spike Protein (RBD, mFc Tag), the EC50 of COVID-19 Spike Protein (RBD, mFc Tag) is 15-50 ng/mL. 2. Loaded Human ACE2 Protein (His tag) on SA Biosensor, can bind COVID-19 Spike/RBD Protein (RBD, mFc Tag) with an affinity constant of 0.562 nM as determined by Octet RED System.
Molecular Mass	The recombinant COVID-19 Spike Protein (RBD, mFc Tag) consists of 457 amino acids and predicts a molecular mass of 51.5 kDa.
Endotoxin	< 1.0 EU per µg protein as determined by the LAL method.
Purity	> 95% as determined by SDS-PAGE. > 95% as determined by SEC-HPLC.
Stability	Samples are stable for up to twelve months from date of receipt at -20 to -80 centigrade.
Storage	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.

Reconstitution

It is recommended that sterile water be added to the vial to prepare a stock solution of 0.2 ug/ul. Centrifuge the vial at 4°C 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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