Active Recombinant 2019-nCoV Spike S1+S2 ECD(D614G) Protein, His-tagged

Cat. No. Spike-043V **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant 2019-nCoV Spike S1+S2 ECD(D614G) Protein (YP_009724390.1) (Met1-Pro1213(D614G)) was expressed in Insect cells, fused with a polyhistidine tag at the C-terminus.
Species	Sars-Cov-2
Source	Insect Cells
ProteinLength	Met1-Pro1213
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

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	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	Val 16
Form	Lyophilized from sterile 20 mM Tris, 300 mM NaCl, 10 % glycerol, pH 8.0. Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization.
Bio-activity	Measured by its binding ability in a functional ELISA.Immobilized human ACE2 protein (Fc tag)(at 2 μg/mL (100 μL/well) can bind SARS-CoV-2 (2019-nCoV) Spike S1+S2 ECD (D614G)-His, the EC50 of SARS-CoV-2 (2019-nCoV) Spike S1+S2 ECD (D614G)-His is 0.5-1.2 μg/mL.
Molecular Mass	The recombinant SARS-CoV-2 (2019-nCoV) Spike Protein (S1+S2 ECD (D614G), His tag) consists of 1209 amino acids and predicts a molecular mass of 134.3 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°C to -80°C.
Storage	Store it under sterile conditions at -20°C to -80°C. It is recommended that the protein

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	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℃ before opening to recover the entire contents.

GENE INFORMATION

Gene Name	S surface glycoprotein [Severe acute respiratory syndrome coronavirus 2]
Official Symbol	S
Synonyms	Spike; S1 protein; Spike glycoprotein Subunit1; S glycoprotein Subunit1; Spike protein S1; COVID-19
Gene ID	43740568
Protein Refseq	YP_009724390.1
UniProt ID	P0DTC2

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