Active Recombinant 2019-nCoV Spike S1+S2 ECD (R683A, R685A, F817P, A892P, A899P, A942P, K986P, V987P) Protein, His-tagged

Cat. No. Spike-377V **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant 2019-nCoV Spike Protein (S1+S2 ECD) (YP_009724390.1) (Met1-Pro1213(R683A, R685A, F817P, A892P, A899P, A942P, K986P, V987P)) was expressed in HEK293, fused with the bacteriophage T4 fibritin and a polyhistidine tag at the C-terminus.
Species	Sars-Cov-2
Source	HEK293
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

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	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.
Predicted N Terminal	Val 16
Form	Lyophilized from sterile PBS, pH 7.4. 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 ACE2 Protein, Human, Recombinant (mFc Tag) at 2 μg/mL (100 μL/well) can bind SARS-CoV-2 (2019-nCoV) Spike S1+S2 ECD (R683A, R685A, F817P, A892P, A899P, A942P, K986P, V987P)-His Recombinant Protein, the EC50 of SARS-CoV-2 (2019-nCoV) Spike S1+S2 ECD (R683A, R685A, F817P, A892P, A899P, A942P, K986P, V987P)-His Recombinant Protein is 10-50 ng/mL.
Molecular Mass	The recombinant 2019-nCoV Spike Protein (S1+S2 ECD(R683A, R685A, F817P, A892P, A899P, A942P, K986P, V987P), His tag) consists of 1248 amino acids and predicts a molecular mass of 138.5 kDa.
Endotoxin	< 1.0 EU per μg protein as determined by the LAL method.
Purity	> 90 % as determined by SDS-PAGE. > 90 % as determined by SEC-HPLC.

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Storage	Samples are stable for up to twelve months from date of receipt at -20°C to -80°C Store it under sterile conditions at -20°C to -80°C. 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 surface glycoprotein [Severe acute respiratory syndrome coronavirus 2]
Official Symbol	S
Synonyms	coronavirus spike Protein, 2019-nCoV; cov spike Protein, 2019-nCoV; ncov RBD Protein, 2019-nCoV; ncov s1 Protein, 2019-nCoV; ncov s2 Protein, 2019-nCoV; ncov spike Protein, 2019-nCoV; NCP-CoV RBD Protein, 2019-nCoV; NCP-CoV s1 Protein, 2019-nCoV; NCP-CoV s2 Protein, 2019-nCoV; NCP-CoV Spike Protein, 2019-nCoV; novel coronavirus RBD Protein, 2019-nCoV; novel coronavirus s1 Protein, 2019-nCoV; novel coronavirus s2 Protein, 2019-nCoV; novel coronavirus spike Protein, 2019-nCoV; RBD Protein, 2019-nCoV; S1 Protein, 2019-nCoV; S2 Protein, 2019-nCoV; Spike RBD Protein, 2019-nCoV
Gene ID	43740568
Protein Refseq	YP_009724390.1

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UniProt ID	P0DTC2

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