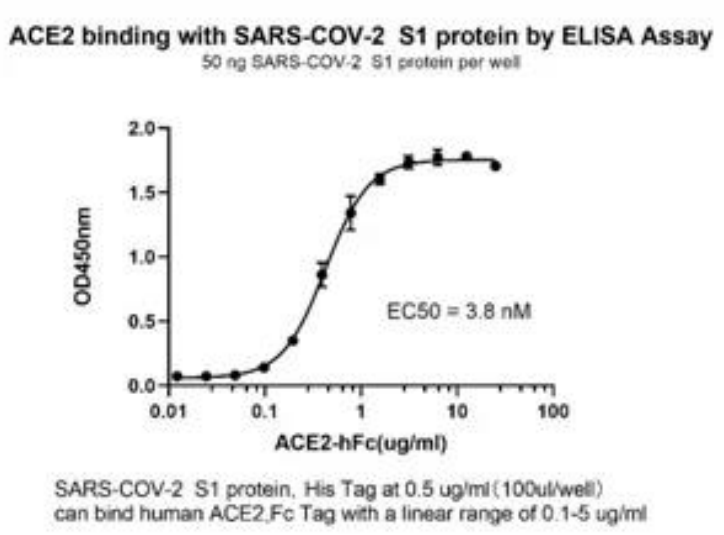
Datasheet

Recombinant SARS-CoV-2 Spike Glycoprotein (S1), His-Tag

Catalogue No:	BSV-COV-PR-36	BSV-COV-PR-37
Pack Size	100 µg	500 µg
Product Name:	Recombinant SARS-CoV-2 Spike Glycoprotein (S1), His-Tag	
Description:	DNA sequence encoding extracellular fragment [16-675] of nCoV Spike S1 including a C-terminal polyHis was expressed in HEK cells.	
Species:	2019-nCoV, SARS-CoV-2	
Sequence:	DNA sequence encoding extracellular fragment [16-675] of nCoV Spike S1 including a C-terminal polyHis was expressed in HEK cells.	
Accession No:	QIC53204.1 (GenBank)	
Tag:	C-terminal His-Tag	
Host:	HEK293 cells	
Activity:	The activity was tested by binding Human ACE2-Fc in functional ELISA assay, the calculated EC50 was determined to be 0.1µg/ml.	
Applications:	 2019-nCoV S1-His tagged (coating at 0.5µg well) binding with Human ACE2 Fc. The linear range was found to be 0.1-5µg/ml.	

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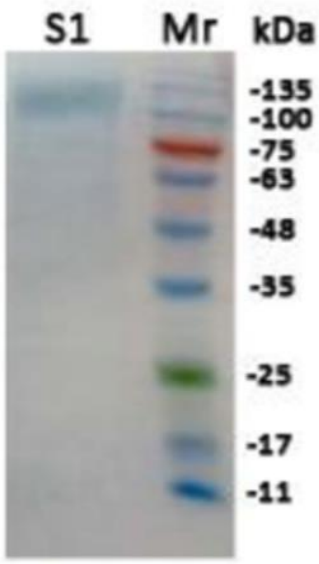
Purity:	>95%, as determined by SDS-PAGE and HPLC
Predicted Molecular Mass:	 Recombinant nCoV S1 encodes the nCoV spike glycoprotein S1 sequence. This molecule has a calculated mass of approximately 76kDa. Recombinant S1 migrates due to glycosylation as an approximately 120 kDa protein under reducing conditions in SDS-PAGE.
Presentation:	Recombinant COVID-19 Spike S1 was lyophilized from 0.2 µm filtered PBS solution pH 7.4.
Reconstitution:	A quick spin of the vial followed by reconstitution in distilled water to a concentration not less than 0.1 mg/mL. This solution can then be diluted into other buffers.
Endotoxin:	Endotoxin content was assayed using a LAL gel clot method. Endotoxin level was found to be less than 0.1 ng/µg(1EU/µg).
Shipping, Storage & Stability:	The lyophilized protein is stable for at least 2 years from date of receipt at -20°C.
Background:	The spike (S) glycoprotein of coronaviruses contains protrusions that will only bind to certain receptors on the host cell. It has been reported that 2019-nCoV can infect the human Respiratory Epithelial cells through interaction with the human ACE2 receptor. The S 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. So, S protein has a key role in the induction of neutralizing-antibody and T-cell responses, as well as protective immunity. Known receptors binding 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.

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The S protein 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. Besides, the S protein is known to be essential in the binding of the virus to the host cell at the advent of the infection process.

The main functions for the S 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.

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