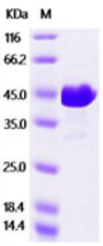
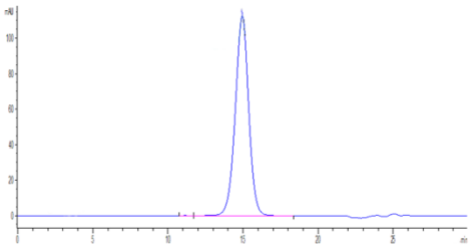
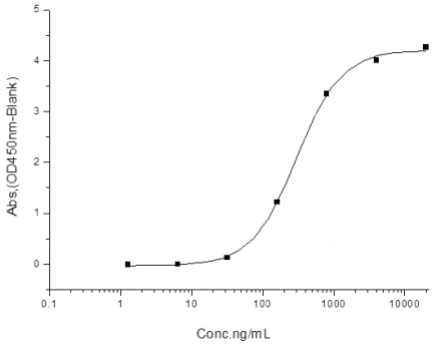
PRODUCT DATASHEET

Catalog No:	BSV-COV-PR-09
Pack Size	100 µg
Product Name:	SARS-CoV-2 (2019-nCoV) Spike Protein (RBD, Fc Tag)
Description:	A DNA sequence encoding the NCP-CoV(2019-nCoV) Spike Protein (RBD) was expressed with the Fc region of human IgG1 at the C-terminus.
Species:	2019-nCoV, SARS-CoV-2
Sequence:	A DNA sequence encoding the NCP-CoV(2019-nCoV) Spike Protein (RBD) was expressed with the Fc region of human IgG1 at the C-terminus.
Accession No.:	YP_009724390.1
Tag:	C-terminal Fc-Tag
Host:	Expressed in HEK293 Cells
Activity:	The 2019-nCoV Spike Protein (RBD, Fc Tag) can bind with Human ACE2 in functional ELISA assay.
Purity:	>95% as determined by SDS-PAGE.
Predicted Molecular Mass:	 The recombinant NCP-CoV (2019-nCoV) Spike Protein (RBD, Fc tag) consists of 461 amino acids and predicts a molecular mass of 51.8 kDa.

The Innovation Centre, 217 Portobello, Sheffield, S1 4DP
Tel: +44(0)114 224 2235 Email: info@bioservuk.com

Formulation:	Lyophilized from sterile PBS, pH 7.4
Endotoxin:	Endotoxin level is < 1.0 EU/μg purified protein (LAL test)
Shipping, Storage and Stability:	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. Samples are stable for up to twelve months from date of receipt at -20℃ to -80℃ Store it under sterile conditions at -20℃ to -80℃. It is recommended that the protein be aliquoted for optimal storage. Avoid repeated freeze-thaw cycles.
Applications:	 >95% as determined by **SEC-HPLC**  Measured by its binding ability in a functional **ELISA**. Immobilized human ACE2 protein (His-tag) at 2μg/ml (100μl/well) can bind to 2019-nCoV Spike Protein (RBD, mFc-tag) (BSV-COV-PR-09), the EC50 of 2019-nCoV Spike protein (RBD,mFC-tag) (BSV-COV-PR-09) is 15-50 ng/ml.

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. 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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