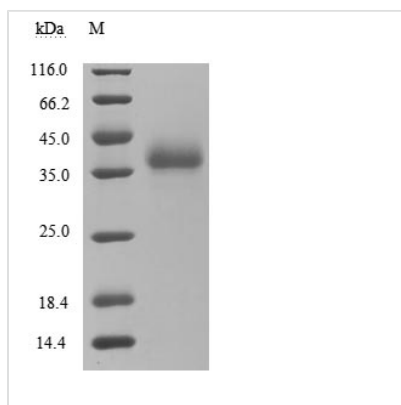


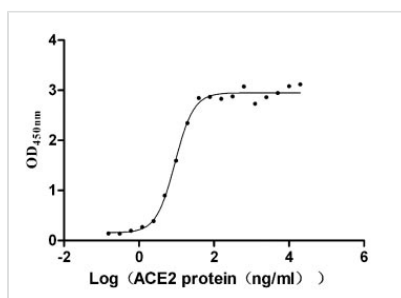


Recombinant Severe acute respiratory syndrome coronavirus Spike glycoprotein (S), partial (Active)

Product Code	CSB-MP348663HQE
Abbreviation	Recombinant SARS-CoV S protein, partial (Active)
Storage	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.
Uniprot No.	P59594
Form	Lyophilized powder
Storage Buffer	Lyophilized from a 0.2 µm filtered 20 mM Tris-HCl, 0.5 M NaCl, 6% Trehalose, pH 8.0
Product Type	Recombinant Protein
Immunogen Species	Human SARS coronavirus (SARS-CoV) (Severe acute respiratory syndrome coronavirus)
Biological Activity	①Measured by its binding ability in a functional ELISA. Immobilized SARS-CoV S-RBD at 2 µg/ml can bind Paguma larvata ACE2 (CSB-MP684964PAL), the EC ₅₀ is 5.056-7.559 ng/ml.②Measured by its binding ability in a functional ELISA. Immobilized SARS-CoV S-RBD at 5 µg/ml can bind human ACE2 (CSB-MP866317HU), the EC ₅₀ is 7.941-10.49 ng/ml.
Purity	Greater than 95% as determined by SDS-PAGE.
Sequence	RVVPSGDVVRFPNITNLCPFGEVFNATKFPSVYAWERKKISNCVADYSVLYNS TFFSTFKCYGVSATKLNLCFSNVYADSFVVKGDDVRQIAPGQTGVIADYNYK LPDDFMGCVLAWNTRNIDATSTGNYNKYRYLRHGKLRPFERDISNVPFSPD GKPCTPPALNCYWPLNDYGFYTTTGIGYQPYRVVLSFELLNAPATVCGPKLS TDLIKNQCVNF
Research Area	Microbiology
Source	Mammalian cell
Target Names	S
Expression Region	306-527aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 10xHis-tagged and C-terminal Myc-tagged
Mol. Weight	30.0 kDa
Protein Length	Partial
Image	

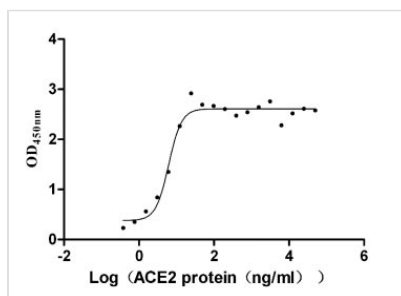


(Tris-Glycine gel) Discontinuous SDS-PAGE (reduced) with 5% enrichment gel and 15% separation gel.



Activity

Measured by its binding ability in a functional ELISA. Immobilized SARS-CoV S-RBD at 2 μ g/ml can bind Paguma larvata ACE2 (CSB-MP684964PAL), the EC_{50} is 5.056-7.559 ng/ml.



Activity

Measured by its binding ability in a functional ELISA. Immobilized SARS-CoV S-RBD at 5 μ g/ml can bind human ACE2 (CSB-MP866317HU), the EC_{50} is 7.941-10.49 ng/ml.

Description

This recombinant protein corresponds to the receptor-binding domain (RBD, amino acids 306-527) of the SARS-CoV spike glycoprotein (S), expressed in mammalian cells with dual tags: an N-terminal 10 $\times$ His tag and a C-terminal Myc tag for enhanced detection and purification. It demonstrates high purity (>95% by SDS-PAGE) and low endotoxin levels (<1.0 EU/ μ g, LAL method), ensuring suitability for sensitive microbiological assays. Functional validation via ELISA confirms its binding activity to both Paguma larvata ACE2 (CSB-MP684964PAL) and human ACE2 (CSB-MP866317HU), with EC_{50} of 5.056–7.559 ng/mL and 7.941–10.49 ng/mL, respectively, highlighting its utility in studying cross-species viral entry mechanisms and host receptor interactions. Provided as a lyophilized powder, this recombinant SARS-CoV S protein retains structural integrity and is optimized for reconstitution in downstream applications. Its mammalian expression ensures proper glycosylation and folding, making it a critical tool for SARS-CoV research, vaccine development, and therapeutic antibody screening in microbiology.

The spike (S) protein of SARS-CoV, a member of the coronavirus family, is a critical determinant of the virus's ability to infect host cells. This glycoprotein is integral to the virus's life cycle as it facilitates the initial attachment of the virus to



host cells via binding to the ACE2 receptor. The S protein consists of two main subunits: the S1 subunit and the S2 subunit. The S1 subunit is primarily responsible for receptor recognition, while the S2 subunit plays a pivotal role in membrane fusion and the entry of the viral particle into the host cell [1][2].

The process of viral entry is dependent on several biochemical steps that include proteolytic cleavage of the S protein, which is essential for its fusion capability. In particular, cleavage at the S1/S2 site by host proteases such as the TMPRSS2 is crucial. This cleavage event activates the S protein, allowing it to facilitate membrane fusion between the viral and host cell membranes. Alternatively, in some cellular environments, other proteases such as Cathepsin B/L can also assist in this activation step [3][4][5]. Such proteolytic processing not only primes the S protein but also enhances the infectivity of the virus, underscoring the role of host factors in SARS-CoV and its related strains, including SARS-CoV-2 [4][6]. Moreover, the S protein is not only critical for the entry of the virus but also serves as a major target for vaccine development due to its immunogenic properties [1][2][7].

References:

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- [4] M. Hoffmann, H. Kleine-Weber, et al. Sars-cov-2 cell entry depends on ace2 and tmprss2 and is blocked by a clinically proven protease inhibitor. *Cell*, vol. 181, no. 2, p. 271-280.e8, 2020. <https://doi.org/10.1016/j.cell.2020.02.052>
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- [6] Y. Park, J. Ahn, S. Hwang, K. Sung, J. Lim, & K. Kwack. Structural similarity analysis of the spike protein of sars-cov-2 and other sars-related coronaviruses. 2020. <https://doi.org/10.20944/preprints202003.0409.v1>
- [7] S. Jangra, J. Vrieze, et al. Sterilizing immunity against sars-cov-2 infection in mice by a single-shot and modified imidazoquinoline tlr7/8 agonist-adjuvanted recombinant spike protein vaccine. 2020. <https://doi.org/10.1101/2020.10.23.344085>

Endotoxin

Less than 1.0 EU/ug as determined by LAL method.

Reconstitution

We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Please reconstitute protein in deionized sterile water to a concentration of 0.1-1.0 mg/mL. We recommend to add 5-50% of glycerol (final concentration) and aliquot for long-term storage at -20°C/-80°C. Our default final



concentration of glycerol is 50%. Customers could use it as reference.

Shelf Life

The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself.

Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.