



Recombinant Macaca fascicularis Angiotensin-converting enzyme (ACE2), partial (Active)

Product Code	CSB-MP3414MOV
Abbreviation	Recombinant Cynomolgus monkey ACE2 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.	A0A2K5X283
Form	Lyophilized powder
Storage Buffer	Lyophilized from a 0.2 µm filtered PBS, 6% Trehalose, pH 7.4
Product Type	Recombinant Protein
Immunogen Species	Macaca fascicularis (Crab-eating macaque) (Cynomolgus monkey)
Biological Activity	①Measured by its binding ability in a functional ELISA. Immobilized SARS-CoV-2-S1-RBD (CSB-MP3324GMY1b1) at 5 µg/ml can bind Cynomolgus-ACE2, the EC ₅₀ is 5.638-9.496 ng/ml.
Purity	Greater than 90% as determined by SDS-PAGE. Greater than 90% as determined by SEC-HPLC.
Sequence	QSTIEEQAKTFLDKFNHEAEDLFYQSSLASWNYNTNITEENVQNMNNAGEKW SAFLKEQSTLAQMYPLQEIQNLTVKLQLQALQQNGSSVLSSEDKSKRLNTILNTM STIYSTGKVCNPNPQECLLLDPGLNEIMEKSLDYNERLWAWEGWRSEVGKQ LRPLYEEYVVLKNEMARANHYKDYGDYWRGNYEVNGVDGYDYNRDQLIEDV ERTFEEIKPLYEHLHAYVRAKLMNAYPSYISPTGCLPAHLLGDMWGRFWTNLY SLTVPGQKPNIDVTDAMVNQAWNAQRIFKEAEKFFVSVGLPNMTQGFWENS MLTDPGNVQKVCHPTAWDLGKGDFRIIMCTKVTMDDFLTAHHEMGHIQYDM AYAAQPFLLRNGANEGFHEAVGEIMSLSAATPKHLKSIGLLSPDFQEDNETEIN FLLKQALTIVGTLPFTYMLEKWRWMVFKGEIPKDQWMKKWWEMKREIVGVVE PVPHDETYCDPASLFHVSNDYSFIRYYTRTLYQFQFQEALCQAAKHEGPLHKC DISNSTEAGQKLLNMLKLGKSEPWTALENVVGAKNMNVRPLLNYFEPLFTWL KDQNKNSFVGWSTDWSPYADQSIKVRISLKSALGDKAYEWNDNEMYLFRSSV AYAMRTYFLEIKHQITLFGCEEDVRVADLKPRISFNFYVTAPKNVSDIIPRTEVEEA IRISRSRINDAFRLNDNSLEFLGIQTTLAPPYQSPVTT
Research Area	Cancer
Source	Mammalian cell
Target Names	ACE2
Expression Region	18-741aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.


Tag Info

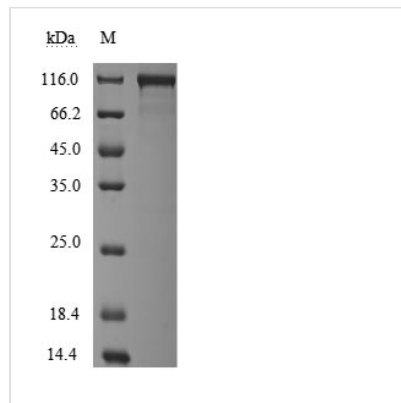
C-terminal hFc1-tagged

Mol. Weight

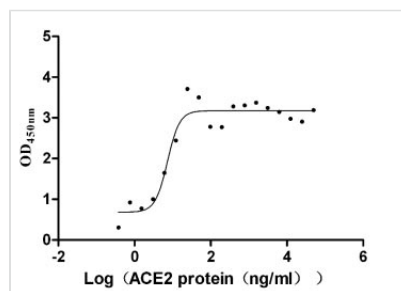
112.7 kDa

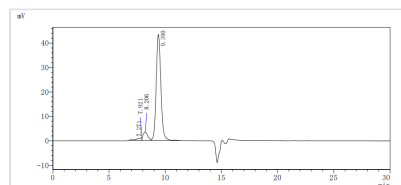
Protein Length

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-2-S1-RBD (CSB-MP3324GMY1b1) at 5 µg/ml can bind Cynomolgus-ACE2, the EC₅₀ is 5.638-9.496 ng/ml.


The purity of ACE2 was greater than 95% as determined by SEC-HPLC

Description

This recombinant protein is a high-purity (>90% measured by SDS-PAGE and SEC-HPLC) form of *Macaca fascicularis* angiotensin-converting enzyme 2 (ACE2), expressed in mammalian cells. It consists of the amino acids 18-741 of *Macaca fascicularis* ACE2 protein and is fused with a C-terminal hFc tag for enhanced stability and detection. This recombinant ACE2 protein contains low endotoxin levels (<1.0 EU/µg, LAL method), ensuring minimal interference in cell-based assays. Its functional activity has been confirmed by binding to SARS-CoV-2-S1-RBD (EC₅₀: 5.638–9.496 ng/mL in ELISA), validating its relevance in COVID-19 and ACE2-related research. Its lyophilized formulation is convenient for long-term stability and reconstitution. Designed for cancer and virology studies, this recombinant ACE2 protein is a critical tool for investigating viral entry mechanisms (e.g., SARS-CoV-2), receptor-ligand interactions, and therapeutic development. Its mammalian cell expression ensures proper post-translational modifications, closely mimicking native protein behavior.

Macaca fascicularis, also referred to as the long-tailed or crab-eating macaque,



presents a significant focus in biomedical research, notably concerning the ACE2. ACE2 acts as a receptor for the spike protein of coronaviruses such as SARS-CoV and SARS-CoV-2, facilitating viral entry into host cells [1][2]. The biochemical properties and genetic variations of ACE2 in *M. fascicularis* have been explored, revealing insights into its susceptibility to SARS-CoV-2, aligning with findings that multiple Old World monkeys, including *M. fascicularis*, can be infected and develop clinical symptoms akin to those seen in human COVID-19 cases [3][4][5].

The affinity of ACE2 for the receptor-binding domain of the SARS-CoV-2 spike protein is critical in evaluating the species' susceptibility to the virus. Studies indicate that the ACE2 of *M. fascicularis* exhibits strong binding interactions with the spike protein, suggesting a high potential for infection and consequent disease [2][3]. Comparatively, *M. fascicularis*, along with *M. mulatta* (Rhesus macaque), are established models for studying human diseases, particularly due to their similar ACE2 structure, which has been exploited in various preclinical studies [4][5]. Furthermore, the genetic composition of *M. fascicularis* is notably diverse, which may influence the patterns of ACE2 expression and further modulate responses to viral infections [5][6].

In addition to its role as a viral receptor, ACE2 possesses physiological functions that are highly relevant to cardiovascular health by regulating the renin-angiotensin system. It catalyzes the conversion of angiotensin II, a potent vasoconstrictor, into angiotensin 1-7, which has vasodilatory effects. Alterations in ACE2 expression in the context of infection can lead to dysregulation of this system, contributing to aspects of disease pathology seen in infected individuals [1]. The nexus between ACE2's viral and physiological roles underscores the importance of *M. fascicularis* in comprehensive studies aimed at understanding both viral biology and cardiovascular implications stemming from infections [1].

References:

- [1] J. Damas, G. Hughes, et al., Broad host range of sars-cov-2 predicted by comparative and structural analysis of ace2 in vertebrates. 2020. <https://doi.org/10.1101/2020.04.16.045302>
- [2] L. Lopes, N. Pina, A. Silva, & P. Bandiera?Paiva. Evolutionary analysis of mammalian ace2 and the key residues involved in binding to the spike protein revealed potential sars-cov-2 hosts. *Journal of Medical Microbiology and Infectious Diseases*, vol. 10, no. 1, p. 1-9, 2022. <https://doi.org/10.52547/jommid.10.1.1>
- [3] Y. Liu, G. Hu, et al. Functional and genetic analysis of viral receptor ace2 orthologs reveals a broad potential host range of sars-cov-2, *Proceedings of the National Academy of Sciences*. vol. 118, no. 12, 2021. <https://doi.org/10.1073/pnas.2025373118>
- [4] S. Laila, D. Astuti, I. Suparto, E. Handharyani, T. Register, & D. Sajuthi. Atherosclerotic lesion of the carotid artery in indonesian cynomolgus monkeys receiving a locally sourced atherogenic diet. *Veterinary Sciences*, vol. 9, no. 3, p. 105, 2022. <https://doi.org/10.3390/vetsci9030105>
- [5] S. Kanthaswamy, J. Ng, et al. The genetic composition of populations of cynomolgus macaques (*macaca fascicularis*) used in biomedical research. *Journal of Medical Primatology*, vol. 42, no. 3, p. 120-131, 2013.



<https://doi.org/10.1111/jmp.12043>

[6] M. Abdul?Latiff, F. Ruslin, et al. Continental monophyly and molecular divergence of peninsular malaysia'smacaca fascicularis fascicularis, Biomed Research International. vol. 2014, p. 1-18, 2014.

<https://doi.org/10.1155/2014/897682>

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.