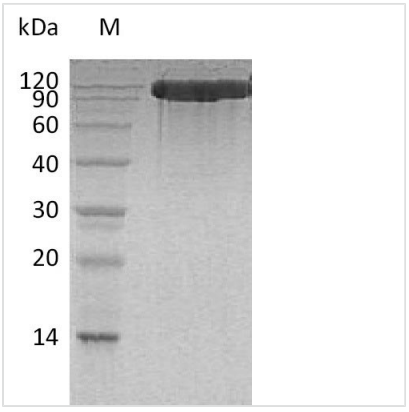
Recombinant Human Angiotensin-converting enzyme 2 (ACE2), partial (Active)

Product Code	CSB-AP005671HU
Abbreviation	Recombinant Human ACE2 protein, partial (Active)
Uniprot No.	Q9BYF1
Form	Liquid
Storage Buffer	0.2 μm Filtered 20 mM Tris-HCl, 300 mM NaCl, 1 mM ZnCl2, 10% Glycerol, pH 7.4
Product Type	Others
Immunogen Species	Homo sapiens (Human)
Biological Activity	Loaded 2019-nCoV S Protein RBD-mFc on AMC Biosensor, can bind Human ACE-2-His with an affinity constant of 2.06 nM as determined in BLI assay.
Purity	Greater than 95% as determined by SDS-PAGE.
Sequence	QSTIEEQAKTFLDKFNHEAEDLFYQSSLASWNYNTNITEENVQNMNNAGDKW SAFLKEQSTLAQMYPLQEIQNLTVKLQLQALQQNGSSVLSEDKSKRLNTILNTM STIYSTGKVCNPDNPQECLLLEPGLNEIMANSLDYNERLWAWESWRSEVGKQ LRPLYEEYVVLKNEMARANHYEDYGDYWRGDYEVNGVDGYDYSRGQLIEDV EHTFEEIKPLYEHLHAYVRAKLMNAYPSYISPIGCLPAHLLGDMWGRFWTNLY SLTVPFGQKPNIDVTDAMVDQAWDAQRIFKEAEKFFVSVGLPNMTQGFWENS MLTDPGNVQKAVCHPTAWDLGKGDFRILMCTKVTMDDFLTAHHEMGHIQYD MAYAAQPFLLRNGANEGFHEAVGEIMSLSAATPKHLKSIGLLSPDFQEDNETEI NFLLKQALTIVGTLPFTYMLEKWRWMVFKGEIPKDQWMKKWWEMKREIVGVV EPVPHDETYCDPASLFHVSNDYSFIRYYTRTLYQFQFQEALCQAAKHEGPLHK CDISNSTEAGQKLFNMLRLGKSEPWTLALENVVGAKNMNVRPLLNYFEPLFT WLKDQNKNSFVGWSTDWSPYADQSIKVRISLKSALGDKAYEWNDNEMYLFR SSVAYAMRQYFLKVKNQMILFGEEDVRVANLKPRISFNFFVTAPKNVSDIIPRT EVEKAIRMSRSRINDAFRLNDNSLEFLGIQPTLGPPNQPPVS
Research Area	Cardiovascular
Source	Mammalian cell
Target Names	ACE2
Expression Region	18-740aa
Tag Info	C-terminal 6xHis-tagged
Mol. Weight	84.63 kDa
Protein Length	Partial
Image	



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

Description

Producing recombinant human Angiotensin-converting enzyme 2 (ACE2) involves several steps starting with isolating the target gene fused with a C-terminal 6xHis-tag gene. The target gene encodes the 18-740aa of the human ACE2. This fused gene is cloned into an expression vector and introduced into mammalian cells via transformation. The mammalian cells express the protein, which is collected from the cell lysate. Purification of the protein is typically achieved using affinity chromatography. The final step involves validating the recombinant ACE2 protein's functionality through various biochemical assays to ensure it meets the required standards. Its purity is greater than 95% as determined by SDS-PAGE. It contains less than 1.0 EU/μg of endotoxin as determined by the LAL method. This recombinant ACE2 protein has also been validated as an active protein in BLI assay, in which the SARS-C0V-2 S Protein RBD-mFc on AMC Biosensor can bind Human ACE-2-His with an affinity constant of 2.06 nM.

Human ACE2 is a zinc metalloprotease that was first discovered in 2000 and shares substantial homology with human ACEs [1]. ACE2 is a crucial component of the renin-angiotensin system (RAS) that can catalyze the cleavage of angiotensin I to angiotensin 1-9 [2][3]. Structurally, the human ACE2 contains an extracellular N-terminal peptidase domain, a C-terminal collectrin-like domain, a single transmembrane helix, and an intracellular segment [4]. ACE2 plays a significant role in diseases such as COVID-19, where it serves as the functional host receptor for the virus [5]. Studies have shown that viruses like SARS-CoV and 2019-nCoV can invade human cells by binding to ACE2 [6]. ACE2 is widely expressed in various human tissues, including the respiratory, cardiovascular, digestive, and urinary systems, rendering these organs susceptible to SARS-CoV-2 infection [7][8].

References:
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Endotoxin	Less than 1.0 EU/μg as determined by LAL method.
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.