

# PRODUCT INFORMATION



## ACE2 (human, recombinant)

Item No. 30587

### Overview and Properties

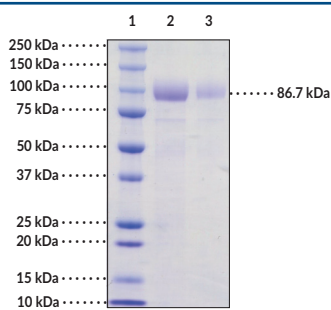
**Synonyms:** ACEH, ACE-related Carboxypeptidase, Angiotensin-converting Enzyme Homolog, Angiotensin-converting Enzyme 2, Metalloprotease MPROT15  
**Source:** Active recombinant human C-terminal His-tagged ACE2 expressed in HEK293 cells  
**Amino Acids:** 1-740  
**Uniprot No.:** Q9BYF1  
**Molecular Weight:** 86.7 kDa  
**Storage:** -80°C (as supplied)  
**Stability:** ≥6 months  
**Purity:** *batch specific* (≥90% estimated by SDS-PAGE)  
**Supplied in:** 50 mM PIPES, pH 7.0, with 300 mM sodium chloride, 5% mannitol, 5% trehalose, 0.01% Tween 20, and 25% glycerol

### Protein

**Concentration:** *batch specific* mg/ml  
**Activity:** *batch specific* U/ml  
**Specific Activity:** *batch specific* U/mg  
**Unit Definition:** One unit is defined as the amount of enzyme required to produce 1 nmol of Mca per minute at 25°C in 100 mM MES, pH 6.5, with 300 mM sodium chloride, and 0.01% Brij-35 containing 50 μM Mca-YVADAP-K(Dnp)-OH (Item No. 24562).

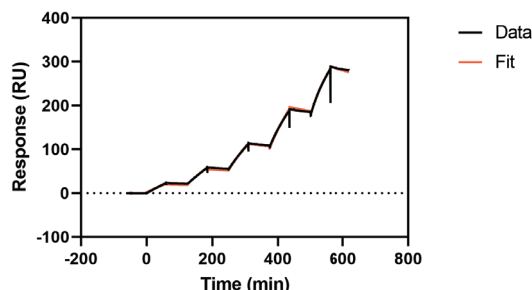
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Images

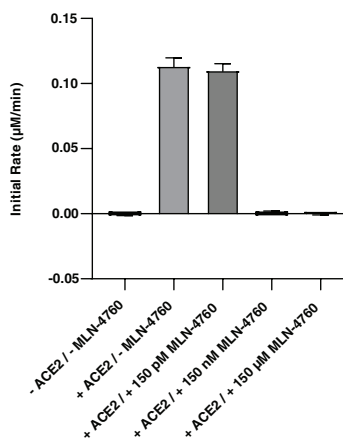


Lane 1: MW Markers  
Lane 2: ACE2 (4 μg)  
Lane 3: ACE2 (2 μg)

SDS-PAGE Analysis of ACE2.



ACE2 Binds the SARS-CoV-2 Surface Glycoprotein Receptor Binding Domain. SARS-CoV-2 Surface Glycoprotein Receptor Binding Domain (rabbit IgG1 Fc-tagged) (Item No. 30590) was captured on a Protein G Chip S series and SPR analysis was used to determine ACE2 (human, recombinant) binding affinity on a Biacore T200, using single cycle kinetics with gradient concentrations of ACE2.



ACE2 is inhibited by MLN-4760. ACE2 inhibition was determined using the substrate Mca-YVADAP-K(Dnp)-OH and serial dilutions of MLN-4760 in a fluorescence-based assay.

**WARNING**  
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

**SAFETY DATA**  
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

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**CAYMAN CHEMICAL**  
1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA  
PHONE: [800] 364-9897  
[734] 971-3335  
FAX: [734] 971-3640  
CUSTSERV@CAYMANCHEM.COM  
WWW.CAYMANCHEM.COM

# PRODUCT INFORMATION



## Description

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Angiotensin-converting enzyme 2 (ACE2) is a carboxypeptidase and homolog of ACE1 that is encoded by ACE2 in humans.<sup>1,2</sup> It is a type I transmembrane protein composed of a cytoplasmic tail and an extracellular domain containing a HEMGH motif, characteristic of zinc-metallopeptidases, which exhibits carboxymonopeptidase activity.<sup>1</sup> ACE2 is expressed in vascular endothelial cells where it catalyzes the conversion of angiotensin II to the vasodilatory peptide angiotensin 1-7 to regulate systemic blood pressure and angiotensin I to angiotensin 1-9, a peptide that counter-regulates the function of angiotensin II.<sup>1-3</sup> It is also expressed in the epithelial cells of the kidney, heart, lung, small intestine, and liver and has roles in fluid homeostasis, cardiac contractility, and amino acid absorption, as well as the prevention of pulmonary fibrosis and hypertension. ACE2 also acts as a functional receptor for severe acute respiratory syndrome coronavirus (SARS-CoV) and SARS-CoV-2 to facilitate viral entry into host cells.<sup>4,5</sup> Cayman's ACE2 (human, recombinant) protein can be used for ELISA, enzyme assay, surface plasmon resonance (SPR), and Western blot (WB) applications.

## References

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1. Perlot, T. and Penninger, J.M. ACE2 - From the renin-angiotensin system to gut microbiota and malnutrition. *Microbes Infect.* **15(13)**, 866-873 (2013).
2. Santos, R.A.S., Sampaio, W.O., Alzamora, A.C., *et al.* The ACE2/angiotensin-(1-7)/MAS axis of the renin-angiotensin system: Focus on angiotensin-(1-7). *Physiol. Rev.* **98(1)**, 505-553 (2018).
3. Ocaranza, M.P., Moya, J., Barrientos, V., *et al.* Angiotensin-(1-9) reverses experimental hypertension and cardiovascular damage by inhibition of the angiotensin converting enzyme/Ang II axis. *J. Hypertens.* **32(4)**, 771-783 (2014).
4. Hoffmann, M., Kleine-Weber, H., Schroeder, S., *et al.* SARS-CoV-2 cell entry depends on ACE2 and TMPRSS2 and is blocked by a clinically proven protease inhibitor. *Cell* **181(2)**, 271-280 (2020).
5. Gurwitz, D. Angiotensin receptor blockers as tentative SARS-CoV-2 therapeutics. *Drug Dev. Res.* (2020).