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Produktinformation



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Diagnostik & molekulare Diagnostik



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Lieferung & Zahlungsart

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Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

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PRODUCT INFORMATION



ACE2 (human, recombinant)

Item No. 30587

Overview and Properties

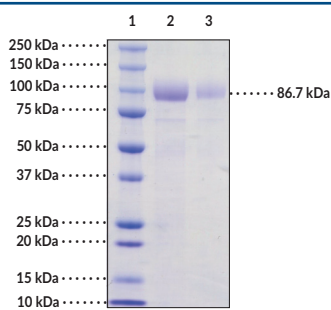
Synonyms: ACEH, ACE-related Carboxypeptidase, Angiotensin-converting Enzyme Homolog, Angiotensin-converting Enzyme 2, Metalloprotease MPROT15
Source: Active recombinant human C-terminal His-tagged ACE2 expressed in HEK293 cells
Amino Acids: 1-740
Uniprot No.: Q9BYF1
Molecular Weight: 86.7 kDa
Storage: -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).

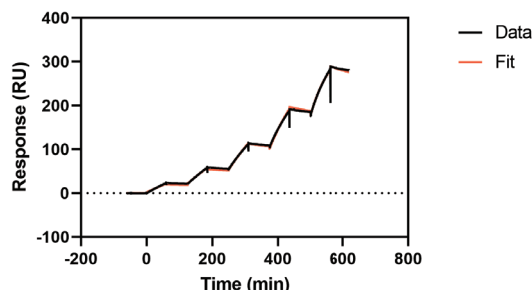
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Images

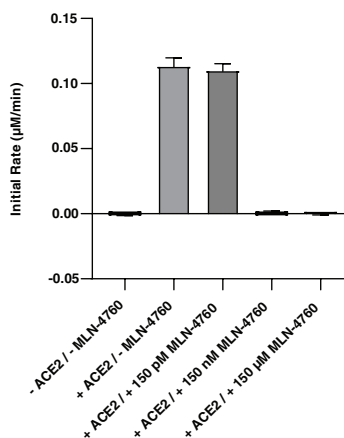


Lane 1: MW Markers
Lane 2: ACE2 (4 μg)
Lane 3: ACE2 (2 μg)

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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PRODUCT INFORMATION



Description

Angiotensin-converting enzyme 2 (ACE2) is a carboxypeptidase and homolog of ACE1 that is encoded by ACE2 in humans.^{1,2} 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.¹ 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.¹⁻³ 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.^{4,5} Cayman's ACE2 (human, recombinant) protein can be used for ELISA, enzyme assay, surface plasmon resonance (SPR), and Western blot (WB) applications.

References

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).