abcam

ab283658

Alexa Fluor® 647 Anti-ACE2 antibody [EPR24705-45]

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Conjugation	Alexa Fluor® 647
Excitation/Emission	Ex: 650nm, Em: 665nm
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.02% Sodium azide Constituents: PBS, 30% Glycerol (glycerin, glycerine), 1% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR24705-45
Purification technique	Affinity purification Protein A
Concentration	0.5 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human

Dilution info	1/100
Notes	-

Flow Cyt

Expected

Species	Human
Dilution info	Use at an assay dependent concentration.
Notes	-

ICC/IF

Expected

Species	Human
Dilution info	Use at an assay dependent concentration.
Notes	-

Target data

See full target information ACE2

Function

Essential counter-regulatory carboxypeptidase of the renin-angiotensin hormone system that is a critical regulator of blood volume, systemic vascular resistance, and thus cardiovascular homeostasis (PubMed:27217402). Converts angiotensin I to angiotensin 1-9, a nine-amino acid peptide with anti-hypertrophic effects in cardiomyocytes, and angiotensin II to angiotensin 1-7, which then acts as a beneficial vasodilator and anti-proliferation agent, counterbalancing the actions of the vasoconstrictor angiotensin II (PubMed:10924499, PubMed:10969042, PubMed:11815627, PubMed:14504186, PubMed:19021774). Also removes the C-terminal residue from three other vasoactive peptides, neurotensin, kinetensin, and des-Arg bradykinin, but is not active on bradykinin (PubMed:10969042, PubMed:11815627). Also cleaves other biological peptides, such as apelins (apelin-13, [Pyr1]apelin-13, apelin-17, apelin-36), casomorphins (beta-casomorphin-7, neocasomorphin) and dynorphin A with high efficiency (PubMed:11815627, PubMed:27217402, PubMed:28293165). In addition, ACE2 C-terminus is homologous to collectrin and is responsible for the trafficking of the neutral amino acid transporter SL6A19 to the plasma membrane of gut epithelial cells via direct interaction, regulating its expression on the cell surface and its catalytic activity (PubMed:18424768, PubMed:19185582). (Microbial infection) Acts as a receptor for human coronaviruses SARS-CoV and SARS-CoV-2, as well as human coronavirus NL63/HCoV-NL63. Isoform 2. Non-functional as a carboxypeptidase. Isoform 2.

	(Microbial infection) Non-functional as a receptor for human coronavirus SARS-CoV-2.

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle, Store in the dark

Notes

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

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Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	The ACE2 protein also known as angiotensin-converting enzyme 2 is an essential component in the renin-angiotensin system. It functions mechanically by converting the hormone angiotensin II to angiotensin-(1-7) which helps regulate blood pressure and fluid balance. The molecular weight of ACE2 is approximately 120 kDa. This protein is expressed in various tissues particularly the lungs heart kidneys and gastrointestinal tract. In cultured cells like Caco-2 cells researchers often study this expression.
Biological function summary	The ACE2 protein plays an important role in the regulation of cardiovascular and renal functions. It is a single-pass type I membrane protein and its activity reduces inflammation and oxidative stress in cells. ACE2 does not function as part of a larger protein complex but its enzymatic conversion has a substantial impact on reducing the effects of angiotensin II in the body leading to vasodilation and decreased blood pressure.
Pathways	ACE2 involvement is significant in the renin-angiotensin system and the kallikrein-kinin system. These pathways are essential for maintaining cardiovascular homeostasis. In the renin-angiotensin system ACE2 works in opposition to angiotensin-converting enzyme (ACE) balancing the effects through the production of angiotensin-(1-7) from angiotensin II. Additionally ACE2 interacts indirectly with proteins like angiotensin receptor type 1 (AT1) and angiotensin receptor type 2 (AT2) ensuring proper signaling and physiological responses.
Associated diseases and disorders	ACE2 links closely with conditions such as hypertension and COVID-19. Increased activity of angiotensin II due to low ACE2 levels contributes to hypertension. In infectious disease SARS-CoV-2 virus responsible for COVID-19 uses ACE2 as an entry receptor to initiate infection in host cells. This interaction highlights the importance of ACE2 in disease pathogenesis and has prompted interest in ACE2 as a potential therapeutic target.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

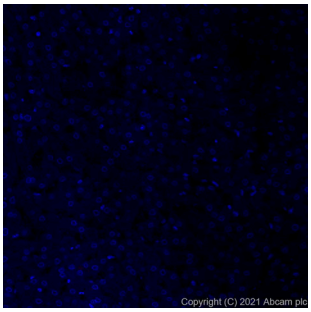
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

2 product images

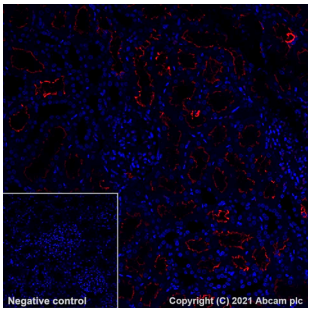


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Alexa Fluor® 647 Anti-ACE2 antibody [EPR24705-45] (ab283658)

ACE2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-ACE2 antibody

Immunohistochemical analysis of paraffin-embedded human liver tissue labeling ACE2 with ab283658 at 1/100 dilution (5.0 µg/ml) followed by a ready to use.
Negative control: no staining in human liver. The section was then incubated overnight at +4°C in TBS containing 0.025% (v/v) Triton X-100 and 1% (w/v) BSA with ab283658 at 1/100 dilution (shown in red). Nuclear DNA was labeled with DAPI (shown in blue). The section was then mounted using Fluoromount®. Non-specific protein-protein interactions were then blocked in TBS containing 0.025% (v/v) Triton X-100, 0.3M (w/v) glycine and 1% (w/v) BSA for 1h at room temperature. Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8). Counterstained with DAPI.

Heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0)



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Alexa Fluor® 647 Anti-ACE2 antibody [EPR24705-45] (ab283658)

ACE2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-ACE2 antibody

Immunohistochemical analysis of paraffin-embedded human kidney tissue labelling ACE2 with ab283658 at 1/100 dilution (5.0 µg/ml) followed by a ready to use.
Apical membranous staining in human kidney. The section was then incubated overnight at +4°C in TBS containing 0.025% (v/v) Triton X-100 and 1% (w/v) BSA with ab283658 at 1/100 dilution (shown in red). Nuclear DNA was labeled with DAPI (shown in blue). The section was then mounted using Fluoromount®. Non-specific protein-protein interactions were then blocked in TBS containing 0.025% (v/v) Triton X-100, 0.3M (w/v) glycine and 1% (w/v) BSA for 1h at room temperature. Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8). Counterstained with DAPI.

Heat mediated antigen retrieval using ab93684 (Tris/EDTA buffer, pH 9.0)

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.