

**ACE1 Antibody**  
Rabbit mAb  
Catalog # AP91542

## Specification

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### ACE1 Antibody - Product Information

Application **WB, IHC, FC**  
Primary Accession **[P12821](#)**  
Clonality **Monoclonal**

#### Other Names

Angiotensin-converting enzyme; somatic isoform precursor; CD143 antigen; DCP; DCP1; Dipeptidyl carboxypeptidase I; Kininase II;

Isotype **Rabbit IgG**  
Host **Rabbit**  
Calculated MW **149715 Da**

### ACE1 Antibody - Additional Information

Purification **Affinity-chromatography**  
Immunogen **A synthesized peptide derived from human ACE1**  
Description **Converts angiotensin I to angiotensin II by release of the terminal His-Leu, this results in an increase of the vasoconstrictor activity of angiotensin. Also able to inactivate bradykinin, a potent vasodilator. Has also a glycosidase activity which releases GPI-anchored proteins from the membrane by cleaving the mannose linkage in the GPI moiety.**  
Storage Condition and Buffer **Rabbit IgG in phosphate buffered saline , pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol. Store at +4°C short term. Store at -20°C long term. Avoid freeze / thaw cycle.**

### ACE1 Antibody - Protein Information

**Name** ACE {ECO:0000303|PubMed:2849100, ECO:0000312|HGNC:HGNC:2707}

#### Function

Dipeptidyl carboxypeptidase that removes dipeptides from the C-terminus of a variety of circulating hormones, such as angiotensin I, bradykinin or enkephalins, thereby playing a key role in the regulation of blood pressure, electrolyte homeostasis or synaptic plasticity (PubMed:<a href="http://www.uniprot.org/citations/15615692" target="\_blank">15615692</a>, PubMed:<a href="http://www.uniprot.org/citations/20826823" target="\_blank">20826823</a>, PubMed:<a href="http://www.uniprot.org/citations/2558109" target="\_blank">2558109</a>, PubMed:<a href="http://www.uniprot.org/citations/4322742" target="\_blank">4322742</a>, PubMed:<a

href="http://www.uniprot.org/citations/7523412" target="\_blank">7523412</a>, PubMed:<a href="http://www.uniprot.org/citations/7683654" target="\_blank">7683654</a>). Composed of two similar catalytic domains, each possessing a functional active site, with different selectivity for substrates (PubMed:<a href="http://www.uniprot.org/citations/10913258" target="\_blank">10913258</a>, PubMed:<a href="http://www.uniprot.org/citations/1320019" target="\_blank">1320019</a>, PubMed:<a href="http://www.uniprot.org/citations/1851160" target="\_blank">1851160</a>, PubMed:<a href="http://www.uniprot.org/citations/19773553" target="\_blank">19773553</a>, PubMed:<a href="http://www.uniprot.org/citations/7683654" target="\_blank">7683654</a>, PubMed:<a href="http://www.uniprot.org/citations/7876104" target="\_blank">7876104</a>). Plays a major role in the angiotensin-renin system that regulates blood pressure and sodium retention by the kidney by converting angiotensin I to angiotensin II, resulting in an increase of the vasoconstrictor activity of angiotensin (PubMed:<a href="http://www.uniprot.org/citations/11432860" target="\_blank">11432860</a>, PubMed:<a href="http://www.uniprot.org/citations/1851160" target="\_blank">1851160</a>, PubMed:<a href="http://www.uniprot.org/citations/19773553" target="\_blank">19773553</a>, PubMed:<a href="http://www.uniprot.org/citations/23056909" target="\_blank">23056909</a>, PubMed:<a href="http://www.uniprot.org/citations/4322742" target="\_blank">4322742</a>). Also able to inactivate bradykinin, a potent vasodilator, and therefore enhance the blood pressure response (PubMed:<a href="http://www.uniprot.org/citations/15615692" target="\_blank">15615692</a>, PubMed:<a href="http://www.uniprot.org/citations/2558109" target="\_blank">2558109</a>, PubMed:<a href="http://www.uniprot.org/citations/4322742" target="\_blank">4322742</a>, PubMed:<a href="http://www.uniprot.org/citations/6055465" target="\_blank">6055465</a>, PubMed:<a href="http://www.uniprot.org/citations/6270633" target="\_blank">6270633</a>, PubMed:<a href="http://www.uniprot.org/citations/7683654" target="\_blank">7683654</a>). Acts as a regulator of synaptic transmission by mediating cleavage of neuropeptide hormones, such as substance P, neurotensin or enkephalins (PubMed:<a href="http://www.uniprot.org/citations/15615692" target="\_blank">15615692</a>, PubMed:<a href="http://www.uniprot.org/citations/6208535" target="\_blank">6208535</a>, PubMed:<a href="http://www.uniprot.org/citations/6270633" target="\_blank">6270633</a>, PubMed:<a href="http://www.uniprot.org/citations/656131" target="\_blank">656131</a>). Catalyzes degradation of different enkephalin neuropeptides (Met- enkephalin, Leu-enkephalin, Met-enkephalin-Arg-Phe and possibly Met- enkephalin-Arg-Gly-Leu) (PubMed:<a href="http://www.uniprot.org/citations/2982830" target="\_blank">2982830</a>, PubMed:<a href="http://www.uniprot.org/citations/6270633" target="\_blank">6270633</a>, PubMed:<a href="http://www.uniprot.org/citations/656131" target="\_blank">656131</a>). Acts as a regulator of synaptic plasticity in the nucleus accumbens of the brain by mediating cleavage of Met-enkephalin- Arg-Phe, a strong ligand of Mu-type opioid receptor OPRM1, into Met- enkephalin (By similarity). Met-enkephalin-Arg-Phe cleavage by ACE decreases activation of OPRM1, leading to long-term synaptic potentiation of glutamate release (By similarity). Also acts as a regulator of hematopoietic stem cell differentiation by mediating degradation of hemoregulatory peptide N-acetyl-SDKP (AcSDKP) (PubMed:<a href="http://www.uniprot.org/citations/26403559" target="\_blank">26403559</a>, PubMed:<a href="http://www.uniprot.org/citations/7876104" target="\_blank">7876104</a>, PubMed:<a href="http://www.uniprot.org/citations/8257427" target="\_blank">8257427</a>, PubMed:<a href="http://www.uniprot.org/citations/8609242" target="\_blank">8609242</a>). Acts as a regulator of cannabinoid signaling pathway by mediating degradation of hemopressin, an antagonist peptide of the cannabinoid receptor CNR1 (PubMed:<a href="http://www.uniprot.org/citations/18077343" target="\_blank">18077343</a>). Involved in amyloid-beta metabolism by catalyzing degradation of Amyloid-beta protein 40 and Amyloid-beta protein 42 peptides, thereby preventing plaque formation (PubMed:<a href="http://www.uniprot.org/citations/11604391" target="\_blank">11604391</a>, PubMed:<a href="http://www.uniprot.org/citations/16154999" target="\_blank">16154999</a>, PubMed:<a href="http://www.uniprot.org/citations/19773553" target="\_blank">19773553</a>). Catalyzes cleavage of cholecystokinin (maturation of Cholecystokinin-8 and Cholecystokinin-5) and Gonadoliberein-1 (both maturation and degradation) hormones (PubMed:<a href="http://www.uniprot.org/citations/10336644" target="\_blank">10336644</a>, PubMed:<a href="http://www.uniprot.org/citations/2983326" target="\_blank">2983326</a>, PubMed:<a href="http://www.uniprot.org/citations/7683654" target="\_blank">7683654</a>, PubMed:<a

href="http://www.uniprot.org/citations/9371719" target="\_blank">9371719</a>). Degradation of hemoregulatory peptide N-acetyl-SDKP (AcSDKP) and amyloid-beta proteins is mediated by the N-terminal catalytic domain, while angiotensin I and cholecystokinin cleavage is mediated by the C-terminal catalytic region (PubMed:<a href="http://www.uniprot.org/citations/10336644" target="\_blank">10336644</a>, PubMed:<a href="http://www.uniprot.org/citations/19773553" target="\_blank">19773553</a>, PubMed:<a href="http://www.uniprot.org/citations/7876104" target="\_blank">7876104</a>).

### Cellular Location

Cell membrane; Single-pass type I membrane protein. Cytoplasm {ECO:0000250|UniProtKB:P09470}. Note=Detected in both cell membrane and cytoplasm in neurons. {ECO:0000250|UniProtKB:P09470} [Isoform Testis-specific]: Cell membrane; Single-pass type I membrane protein. Secreted. Note=The testis-specific isoform can be cleaved before the transmembrane region, releasing a soluble form

### Tissue Location

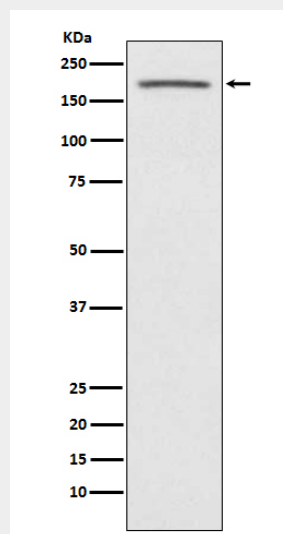
Ubiquitously expressed, with highest levels in lung, kidney, heart, gastrointestinal system and prostate

## ACE1 Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

## ACE1 Antibody - Images



Western blot analysis of ACE1 expression in human fetal kidney lysate.