

# ACE1 Polyclonal Antibody

Catalog # AP68259

## Product Information

Application	WB, IHC-P, IF, ICC, E
Primary Accession	<a href="#">P12821</a>
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Calculated MW	149715

## Additional Information

Gene ID	1636
Other Names	ACE; DCP; DCP1; Angiotensin-converting enzyme; ACE; Dipeptidyl carboxypeptidase I; Kininase II; CD antigen CD143
Dilution	WB~~Western Blot: 1/500 - 1/2000. Immunohistochemistry: 1/100 - 1/300. ELISA: 1/10000. Not yet tested in other applications. IHC-P~~N/A IF~~1:50~200 ICC~~N/A E~~N/A
Format	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.09% (W/V) sodium azide.
Storage Conditions	-20°C

## 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="#">15615692</a> , PubMed: <a href="#">20826823</a> , PubMed: <a href="#">2558109</a> , PubMed: <a href="#">4322742</a> , PubMed: <a href="#">7523412</a> , PubMed: <a href="#">7683654</a> ). Composed of two similar catalytic domains, each possessing a functional active site, with different selectivity for substrates (PubMed: <a href="#">10913258</a> , PubMed: <a href="#">1320019</a> , PubMed: <a href="#">1851160</a> , PubMed: <a href="#">19773553</a> , PubMed: <a href="#">7683654</a> , PubMed: <a href="#">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="#">11432860</a> , PubMed: <a href="#">1851160</a> , PubMed: <a href="#">19773553</a> , PubMed: <a href="#">23056909</a> , PubMed: <a href="#">4322742</a> ). Also able to inactivate bradykinin, a potent vasodilator, and therefore enhance the blood pressure response (PubMed: <a href="#">15615692</a> , PubMed: <a href="#">2558109</a> , PubMed: <a href="#">4322742</a> , PubMed: <a href="#">6055465</a> , PubMed: <a href="#">6270633</a> , PubMed: <a href="#">7683654</a> ).

Acts as a regulator of synaptic transmission by mediating cleavage of neuropeptide hormones, such as substance P, neurotensin or enkephalins (PubMed:[15615692](#), PubMed:[6208535](#), PubMed:[6270633](#), PubMed:[656131](#)). Catalyzes degradation of different enkephalin neuropeptides (Met-enkephalin, Leu-enkephalin, Met-enkephalin-Arg-Phe and possibly Met-enkephalin-Arg-Gly-Leu) (PubMed:[2982830](#), PubMed:[6270633](#), PubMed:[656131](#)). 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:[26403559](#), PubMed:[7876104](#), PubMed:[8257427](#), PubMed:[8609242](#)). Acts as a regulator of cannabinoid signaling pathway by mediating degradation of hemopressin, an antagonist peptide of the cannabinoid receptor CNR1 (PubMed:[18077343](#)). Involved in amyloid-beta metabolism by catalyzing degradation of Amyloid-beta protein 40 and Amyloid-beta protein 42 peptides, thereby preventing plaque formation (PubMed:[11604391](#), PubMed:[16154999](#), PubMed:[19773553](#)). Catalyzes cleavage of cholecystokinin (maturation of Cholecystokinin-8 and Cholecystokinin-5) and Gonadoliberin-1 (both maturation and degradation) hormones (PubMed:[10336644](#), PubMed:[2983326](#), PubMed:[7683654](#), PubMed:[9371719](#)). 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:[10336644](#), PubMed:[19773553](#), PubMed:[7876104](#)).

#### 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

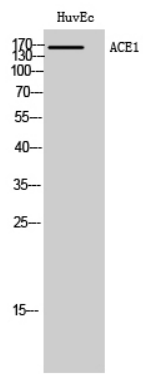
Ubiquitously expressed, with highest levels in lung, kidney, heart, gastrointestinal system and prostate

## Background

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.

## Images

Western Blot analysis of HuvEc cells using ACE1  
Polyclonal Antibody diluted at 1 : 1000



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