

ACE1 Polyclonal Antibody

Catalog # AP74112

Product Information

Application	IHC-P
Primary Accession	P12821
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Calculated MW	149715

Additional Information

Gene ID	1636
Other Names	Angiotensin-converting enzyme (ACE) (EC 3.2.1.-) (EC 3.4.15.1) (Dipeptidyl carboxypeptidase I) (Kininase II) (CD antigen CD143) [Cleaved into: Angiotensin-converting enzyme, soluble form]
Dilution	IHC-P~~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: 15615692 , PubMed: 20826823 , PubMed: 2558109 , PubMed: 4322742 , PubMed: 7523412 , PubMed: 7683654). Composed of two similar catalytic domains, each possessing a functional active site, with different selectivity for substrates (PubMed: 10913258 , PubMed: 1320019 , PubMed: 1851160 , PubMed: 19773553 , PubMed: 7683654 , PubMed: 7876104). 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: 11432860 , PubMed: 1851160 , PubMed: 19773553 , PubMed: 23056909 , PubMed: 4322742). Also able to inactivate bradykinin, a potent vasodilator, and therefore enhance the blood pressure response (PubMed: 15615692 , PubMed: 2558109 , PubMed: 4322742 , PubMed: 6055465 , PubMed: 6270633 , PubMed: 7683654). 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

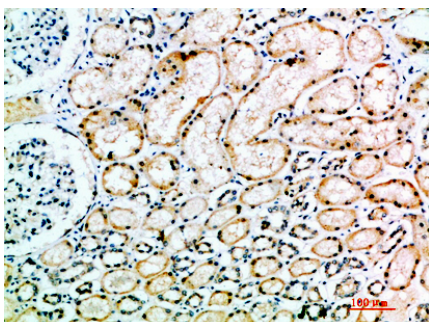
Tissue Location

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

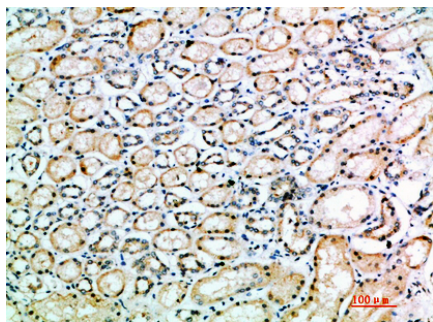
Background

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



Immunohistochemical analysis of paraffin-embedded human-kidney, antibody was diluted at 1:200



Immunohistochemical analysis of paraffin-embedded human-kidney, antibody was diluted at 1:200

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