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# Anti-Ace Picoband Antibody

Catalog # ABO12817

## Product Information

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|---|---|
| **Application** | WB |
| **Primary Accession** | P09470 |
| **Host** | Rabbit |
| **Reactivity** | Mouse, Rat |
| **Clonality** | Polyclonal |
| **Format** | Lyophilized |
| **Description** | Rabbit IgG polyclonal antibody for Ace detection. Tested with WB in Mouse;Rat. |
| **Reconstitution** | Add 0.2ml of distilled water will yield a concentration of 500ug/ml. |

## Additional Information

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| **Gene ID** | 11421 |
| **Other Names** | Angiotensin-converting enzyme, ACE, 3.2.1.-, 3.4.15.1, Dipeptidyl carboxypeptidase I, Kininase II, CD143, Angiotensin-converting enzyme, soluble form, Ace, Dcp1 |
| **Calculated MW** | 150918 |
| **Application Details** | Western blot, 0.1-0.5 □g/ml |
| **Subcellular Localization** | Angiotensin-converting enzyme, soluble form: Secreted. |
| **Tissue Specificity** | Testis-specific isoform is expressed in spermatocytes, adult testis. |
| **Source** | Eukaryota |
| **Contents** | Each vial contains 4mg Trehalose, 0.9mg NaCl, 0.2mg $Na_2HPO_4$, 0.05mg $NaN_3$. |
| **Immunogen** | A synthetic peptide corresponding to a sequence of mouse Ace (AMMNYFKPLTEWLVTENRRHGETLGWPEYNWAPNTAR). |
| **Cross Reactivity** | No cross reactivity with other proteins. |
| **Storage** | At -20˚C; for one year. After r˚Constitution, at 4˚C; for one month. It˚Can also be aliquotted and stored frozen at -20˚C; for a longer time. Avoid repeated freezing and thawing. |

## Protein Information

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| **Name** | Ace {ECO:0000303\|PubMed:2545691, ECO:0000312\|MGI:MGI:87874} |
| **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:11723129, PubMed:12777443, PubMed:14757757, PubMed:16270063, PubMed:35201898, PubMed:7753170, PubMed:8642790, PubMed:9231832). Composed of two similar catalytic domains, each possessing a functional active site, with different selectivity for substrates (PubMed:11303049). 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:11303049, PubMed:14757757, PubMed:9231832). Also able to inactivate bradykinin, a potent vasodilator, and therefore enhance the blood pressure response (By similarity). Acts as a regulator of synaptic transmission by mediating cleavage of neuropeptide hormones, such as substance P, neurotensin or enkephalins (By similarity). Catalyzes degradation of different enkephalin neuropeptides (Met-enkephalin, Leu-enkephalin, Met-enkephalin-Arg-Phe and possibly Met-enkephalin-Arg-Gly-Leu) (PubMed:35201898). 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 (PubMed:35201898). Met-enkephalin-Arg-Phe cleavage by ACE decreases activation of OPRM1, leading to long-term synaptic potentiation of glutamate release (PubMed:35201898). Also acts as a regulator of hematopoietic stem cell differentiation by mediating degradation of hemoregulatory peptide N-acetyl-SDKP (AcSDKP) (PubMed:11303049). Acts as a regulator of cannabinoid signaling pathway by mediating degradation of hemopressin, an antagonist peptide of the cannabinoid receptor CNR1 (By similarity). Involved in amyloid-beta metabolism by catalyzing degradation of Amyloid-beta protein 40 and Amyloid-beta protein 42 peptides, thereby preventing plaque formation (By similarity). Catalyzes cleavage of cholecystokinin (maturation of Cholecystokinin-8 and Cholecystokinin-5) and Gonadoliberin-1 (both maturation and degradation) hormones (By similarity). 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:11303049). |
| **Cellular Location** | [Isoform Somatic]: Cell membrane; Single-pass type I membrane protein. Cytoplasm. Note=Detected in both cell membrane and cytoplasm in neurons [Isoform Testis-specific]: Cell membrane {ECO:0000250\|UniProtKB:P12821}; Single-pass type I membrane protein. Secreted {ECO:0000250\|UniProtKB:P12821}. Note=The testis-specific isoform can be cleaved before the transmembrane region, releasing a soluble form. {ECO:0000250\|UniProtKB:P12821} |
| **Tissue Location** | [Isoform Somatic]: Highly expressed in kidney and lung; not expressed in the liver (PubMed:16154999). In the brain, expressed in the cerebral cortex, hippocampus, cerebellum and basal ganglia/brainstem (PubMed:16154999). Highly expressed in dopamine receptor DRD1-expressing neurons in the dorsal striatum and the nucleus accumbens of the brain (PubMed:35201898). |

## Background

Angiotensin I converting enzyme (ACE), also called DCP or CD143 is a zinc-containing dipeptidyl carboxypeptidase widely distributed in mammalian tissues and is thought to play a critical role in blood pressure regulation. This gene is mapped to 17q23.3. This gene encodes an enzyme involved in catalyzing

the conversion of angiotensin I into a physiologically active peptide angiotensin II. Angiotensin II is a potent vasopressor and aldosterone-stimulating peptide that controls blood pressure and fluid-electrolyte balance. This enzyme plays a key role in the renin-angiotensin system. Many studies have associated the presence or absence of a 287 bp Alu repeat element in this gene with the levels of circulating enzyme or cardiovascular pathophysiologies.

## Images

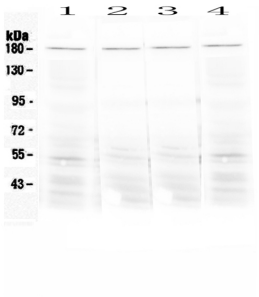



Figure 1. Western blot analysis of Ace using anti-Ace antibody (ABO12817).

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