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Anti-Ace Picoband Antibody

Catalog # ABO12817

Product Information

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

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

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

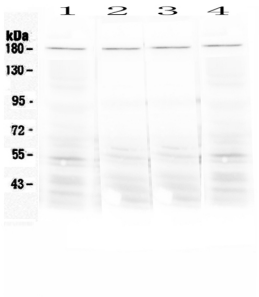


Figure 1. Western blot analysis of Ace using anti-Ace antibody (ABO12817).

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