

Mouse Somatic ACE-1 Antibodies

Cat. # ACE11-P	Mouse ACE-1 Control Peptide #1	SIZE: 100 ug
Cat. # ACE11-A	Rabbit Anti-Mouse ACE-1 IgG # 1 (Aff pure)	SIZE: 100 ug
Cat. # ACE11-C	Mouse ACE1 protein WB +ve Control	SIZE: 100 ul

Renin-Angiotensin System (RAS) is a critical regulator of blood pressure homeostasis. The protease renin cleaves angiotensinogen into inactive decaemic peptide angiotensin-I (Ang-I). Angiotensin-converting enzyme (ACE) then cleaves C-terminal dipeptide from Ang-I to form an active octamer angiotensin-II (Ang-II), which can contribute to hypertension by promoting vascular smooth muscle vasoconstriction and renal tubule sodium reabsorption. ACE can also cleave many other small peptides including the vasodilating peptide bradykinin into inactive fragment, cleave Alzheimer amyloid beta-peptide (Abeta), retard Abeta aggregation, deposition and fibril formation. ACE mutant mice display spontaneous hypotension, partial male infertility and kidney malformations. ACE is found in somatic (s-ACE) and testicular/germinal (t-ACE) isoforms. The products of renin and ACE catalysis, namely Ang1-10 and Ang1-8 can also be by another peptidase, ACE-2 to Ang1-9 and Ang1-7, respectively. ACE-2 and ACE (s-ACE and t-ACE) are made as transmembrane (TM) proteins but these enzymes also exist as soluble, truncated forms lacking the TM and cytosolic domains.

ACE (also known as dipeptidyl carboxypeptidase-1, DCP1; Kininase-II, ACE1) gene has been mapped at human chromosome 17q23. The s-ACE and t-ACE isoforms are generated by alternative splicing of ACE-2 gene. Somatic-ACE, a Zn (II) containing dipeptidyl carboxy peptidase is a single chain glycoprotein with a molecular mass of ~140kDa. The s-ACE enzymes from mouse (1312aa), rat (1313aa) and human (1306aa) contain two large areas of homologous sequence, each containing catalytic site and a Zn-binding region. These homologous regions are approximately half the size of whole s-ACE. The s-ACE is expressed in many somatic tissue tissues, including vascular endothelial cells, renal epithelial cells, and testicular Leydig cells. In contrast to s-ACE, the t-ACE enzymes (~80 kDa) from mouse (732aa), rat (775aa) and human (732aa) contain only one active site and are expressed only in sperms. The soluble ACE is present in serum and seminal, amniotic and cerebrospinal fluids. The t-ACE is identical, from residue 37 to its C-terminus, to the second half or C-terminus of s-ACE. The t-ACE from mouse, rat and human are ~72% identical to each other in their aa seq.

Source of Antigen and Antibodies

Antigen	15aa peptide of Mouse somatic-ACE (gene accession # P09470, refs 1); Designated (ACE11-P or control peptide) conjugated to KLH. Epitope location ~ Extracellular
Ab Host/type	Rabbit, polyclonal Aff pure IgG (cat # ACE11-A) purified over antigen-agarose column
2-ab	Goat Anti-rabbit IgG-HRP cat # 20320 (AP, biotin, FITC conjugates also available)
-ve control	# 20009-1, Rabbit (non-immune) IgG, purified, suitable for ELISA, Western, IHC as -ve control

Mouse somatic-ACE (35-1264 aa) was expressed as a his-tag (C-terminus) fusion protein in NS0 cells and purified (.95%). Due to glycosylation the recombinant mouse ACE-1 is ~160 kDa). **Mouse ACE-1 protein for WB +ve control, Cat # ACE11-C**, is formulated in

SDS-PAGE sample buffer (reduced). This preparation is biologically inactive. It is not suitable for ELISA or other applications where native protein is required. It is supplied in 100 ul/vial. For WB, heat once and load 10 ul/lane and visualize with appropriate antibodies. This preparation is intended for qualitative purpose and not to serve as standard of known concentration. Store frozen in suitable aliquots. Do not freeze, thaw, or heat repeatedly.

Form & Storage of Antibodies/Peptide Control

Affinity pure IgG

100 ug/100ul solution lyophilized powder
Supplied in **Buffer:** PBS+0.1% BSA
Reconstitute powder in PBS at 1mg/ml

Control/blocking peptide

100 ug/100 ul solution lyophilized powder
Supplied in **Buffer:** PBS pH 7.5,
Reconstitute powder in PBS at 1 mg/ml.

Storage

Short-term: unopened, undiluted liquid vials at -20OC and powder at 4oC or -20oC..

Long-term: at -20C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

Stability: 6-12 months at -20oC or below.

Recommended Usage

Western Blotting (1-10 ug/ml for affinity pure antibody using ECL technique). The antibody (**cat # ACE11-A**) will recognize >120 kDa somatic-ACE from native tissues. Recombinant ACE11-C is ~160 kda.

ELISA: Control peptide can be used to coat ELISA plates at 1 ug/ml and detected with antibodies (0.5-1 ug/ml for affinity pure).

Histochemistry & Immunofluorescence: Not tested.

Specificity & Cross-reactivity

Mouse somatic **ACE11-P** control peptide is 81% conserved in rat, 93% in pig, and 87% in human s-ACE. No significant sequence homology exist with the t-ace or ACE-2 of any species. Antibody (**cat # ACE11-A**) cross-reactivity in various species is not known. Control peptide, because of its low mol. Wt (<3 kDa), is not suitable for Western. It should be used for ELISA or antibody blocking experiments (use 5-10 ug control peptide per 1 ug of aff pure IgG or 1 ul antiserum) to confirm antibody specificity (see detailed protocol at:the web site).

General References: (1) Crackower, MA (2002) Nature 417, 822; Sibinga, NES & Ware JA (2000) Circ Res 87, e1-e9; Bernstein, KE et al (1989) JBC 264, 11945; Tinis, SR et al (2000) JBC 275, 33238; Donoghue, M et al (2000) Circ Res 87, e1-e9;

This product is for In vitro research use
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