

ACE (5C5): sc-23909

BACKGROUND

Angiotensin-converting enzyme (ACE) is a carboxy-terminal dipeptidyl exopeptidase that converts Angiotensin I to the potent vasopressor hormone, Angiotensin II. There are two isoforms of ACE, the pulmonary ACEP and the testicular ACET. ACEP is a glycoprotein expressed in vascular endothelial cells of the lung, liver, adrenal cortex, pancreas, kidney and spleen. The ACET isoform is expressed exclusively in adult testis by developing sperm cells, specifically, late pachytene spermatocytes. Additionally, ACE inactivates bradykinin, a vasodepressor peptide, and is involved in fluid/electrolyte homeostasis. Although it bears significant sequence homology to ACE, ACE2 shows a more restricted pattern of expression. ACE is expressed ubiquitously throughout the vasculature while ACE2 is expressed only in cardiac, renal and testicular cells.

REFERENCES

1. Erdos, E.G., et al. 1967. An enzyme in microsomal fraction of kidney that inactivates bradykinin. *Life Sci.* 6: 569-754.
2. Soffer, R.L. 1976. Angiotensin-converting enzyme and the regulation of vasoactive peptides. *Annu. Rev. Biochem.* 45: 73-94.
3. Caldwell, P.R., et al. 1976. Angiotensin-converting enzyme: vascular endothelial localization. *Science* 191: 1050-1051.

CHROMOSOMAL LOCATION

Genetic locus: ACE (human) mapping to 17q23.3; Ace (mouse) mapping to 11 E1.

SOURCE

ACE (5C5) is a mouse monoclonal antibody raised against Angiotensin-converting enzyme from human lung.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

ACE (5C5) is available conjugated to agarose (sc-23909 AC), 500 µg/0.25 ml agarose in 1 ml, for IP.

APPLICATIONS

ACE (5C5) is recommended for detection of ACE of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for ACE siRNA (h2): sc-270350, ACE siRNA (m): sc-29627, ACE shRNA Plasmid (h2): sc-270350-SH, ACE shRNA Plasmid (m): sc-29627-SH, ACE shRNA (h2) Lentiviral Particles: sc-270350-V and ACE shRNA (m) Lentiviral Particles: sc-29627-V.

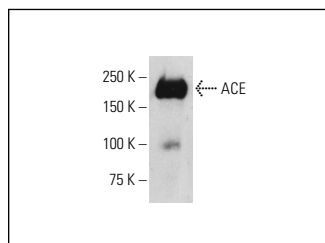
Molecular Weight of ACE: 195 kDa.

Positive Controls: mouse kidney extract: sc-2255, IB4 whole cell lysate: sc-364780 or human kidney extract: sc-363764.

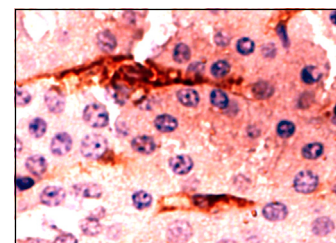
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



Western blot analysis of ACE expression in human kidney tissue extract immunoprecipitated with ACE (5C5): sc-23909 and detected with ACE (N-20): sc-12184.



ACE (5C5): sc-23909. Immunoperoxidase staining of formalin fixed, paraffin-embedded mouse kidney showing membrane and extracellular localization.

SELECT PRODUCT CITATIONS

1. Guberman, C., et al. 2013. Maternal high-fat diet programs rat offspring hypertension and activates the adipose renin-angiotensin system. *Am. J. Obstet. Gynecol.* 209: 262.e1-262.e8.
2. Sangartit, W., et al. 2021. Tetrahydrocurcumin ameliorates kidney injury and high systolic blood pressure in high-fat diet-induced type 2 diabetic mice. *Endocrinol. Metab.* 36: 810-822.
3. Sontag, F., et al. 2022. Soluble urinary somatic angiotensin converting enzyme is overexpressed in patients with preeclampsia: a potential new marker for the disease? *Hypertens. Pregnancy* 41: 190-197.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.



See **ACE (2E2): sc-23908** for ACE antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.