



ACE (9B9): sc-58315

BACKGROUND

Angiotensin-converting enzyme (ACE) is a carboxyl-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 blood pressure regulation and fluid/electrolyte homeostasis. ACE2 is the first known human homolog of ACE. Unlike ACE, which is expressed ubiquitously throughout the vasculature, 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.
4. Soffer, R.L. 1981. *Biochemical Regulation of Blood Pressure*. New York: Wiley-Interscience, 123-164.
5. El-Dorry, H.A., et al. 1982. Molecular and catalytic properties of rabbit testicular dipeptidyl carboxypeptidase. *J. Biol. Chem.* 257: 14128-14133.
6. Kumar, R.S., et al. 1991. The mRNAs encoding the two angiotensin-converting isozymes are transcribed from the same gene by a tissue-specific choice of alternative transcription initiation sites. *J. Biol. Chem.* 266: 3854-3862.
7. Thekkumkara, T.J., et al. 1992. Use of alternative polyadenylation sites for tissue-specific transcription of two angiotensin-converting enzyme mRNAs. *Nucleic Acids Res.* 20: 683-687.
8. Langford, K.G., et al. 1993. Regulated expression of testis angiotensin-converting enzyme during spermatogenesis in mice. *Biol. Reprod.* 48: 1210-1218.

CHROMOSOMAL LOCATION

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

SOURCE

ACE (9B9) is a mouse monoclonal antibody raised against ACE from human lung.

PRODUCT

Each vial contains 500 µl culture supernatant containing IgG₁ with < 0.1% sodium azide.

RESEARCH USE

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

APPLICATIONS

ACE (9B9) is recommended for detection of ACE binding to an N-terminal domain epitope of human and rat origin by immunoprecipitation [10-20 µl per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution to be determined by researcher, dilution range 1:10-1:200) and flow cytometry (10-20 µl per 1 x 10⁶ cells).

Suitable for use as control antibody for ACE siRNA (h): sc-29626, ACE shRNA Plasmid (h): sc-29626-SH and ACE shRNA (h) Lentiviral Particles: sc-29626-V.

Molecular Weight of ACE: 195 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 2) Immunofluorescence: use goat anti-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.