

AT₁ (306): sc-579

BACKGROUND

Angiotensin II (Ang II) is an important physiological effector of blood pressure and volume regulation through vasoconstriction, aldosterone release, sodium uptake and thirst stimulation. Although Ang II interacts with two types of cell surface receptors, AT₁ and AT₂, most of the major cardiovascular effects seem to be mediated through AT₁. Molecular cloning of the AT₁ protein has shown it to be a member of the G protein-associated seven transmembrane protein receptor family. Ang II treatment of cells results in activation of several signal transduction pathways as evidenced by tyrosine phosphorylation of several proteins and induction of others. PLC γ is phosphorylated after 30 seconds of treatment with angiotensin II, indicating this as an early signal transduction event. Ang II treatment also stimulates phosphorylation of Shc, FAK, and MAP kinases and induces MKP-1, indicating stimulation of growth factor pathways. Ang II stimulation through AT₁ has been shown to activate the JAK Stat pathway involving a direct interaction between JAK2 and AT₁ as demonstrated by coimmunoprecipitation. The AT₁ receptor has no cytoplasmic kinase domain, but is able to function as a substrate for Src kinases and has several putative phosphorylation sites.

REFERENCES

1. Tsuda, T., et al. 1991. Vasoconstrictor-induced protein-tyrosine phosphorylation in cultured vascular smooth muscle cells. *FEBS Letts.* 285: 44-48.
2. Murphy, T.J., et al. 1991. Isolation of a cDNA encoding the vascular type-1 angiotensin II receptor. *Nature* 351: 233-236.
3. Duff, J.L., et al. 1993. Angiotensin II induces 3CH134, a protein-tyrosine phosphatase, in vascular smooth muscle cells. *J. Biol. Chem.* 268: 26037-26040.
4. Timmermans, P.B., et al. 1993. Angiotensin II receptors and Angiotensin II receptor antagonists. *Pharmacol. Rev.* 45: 205-251.
5. Marrero, M.B., et al. 1994. Angiotensin II stimulates tyrosine phosphorylation of phospholipase C- γ 1 in vascular smooth muscle cells. *J. Biol. Chem.* 269: 10935-10939.

CHROMOSOMAL LOCATION

Genetic locus: AT1 (human) mapping to 3q25; At1 (mouse) mapping to 13 A3.2.

SOURCE

AT₁ (306) is a rabbit polyclonal antibody raised against amino acids 306-359 of angiotensin II AT₁ of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

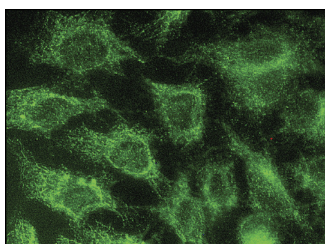
AT₁ (306) is recommended for detection of AT₁ of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1–2 μ g per 100–500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for AT1 siRNA (h): sc-29750, AT1 siRNA (m): sc-29751, AT1 siRNA (r): sc-155992, AT1 shRNA Plasmid (h): sc-29750-SH, AT1 shRNA Plasmid (m): sc-29751-SH, AT1 shRNA Plasmid (r): sc-155992-SH, AT1 shRNA (h) Lentiviral Particles: sc-29750-V, AT1 shRNA (m) Lentiviral Particles: sc-29751-V and AT1 shRNA (r) Lentiviral Particles: sc-155992-V.

Molecular Weight of AT₁: 43 kDa.

Positive Controls: C3H/10T1/2 cell lysate: sc-3801 or NIH/3T3 whole cell lysate: sc-2210.

DATA



AT₁ (306): sc-579. Immunofluorescence staining of methanol-fixed HeLa cells showing membrane localization.

SELECT PRODUCT CITATIONS

1. Bird, I.M., et al. 1996. Immunohistochemical analysis of AT₁ receptor versus P450c17 and 3 beta HSD expression in ovine adrenals. *Endocr. Res.* 22: 349-353.
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3. Leri, A., et al. 1999. Insulin-like growth factor-1 induces Mdm2 and down-regulates p53, attenuating the myocyte renin-angiotensin system and stretch-mediated apoptosis. *Am. J. Pathol.* 274: 567-580.
4. Leri, A., et al. 2000. Inhibition of p53 function prevents renin-angiotensin system activation and stretch-mediated myocyte apoptosis. *Am. J. Pathol.* 157: 843-857.
5. Coulter, C.L., et al. 2000. Ontogeny of angiotensin II type 1 receptor and cytochrome P450(c11) in the sheep adrenal gland. *Biol. Reprod.* 62: 714-719.
6. Brown, R.E., et al. 2003. Mesenchymal chondrosarcoma: molecular characterization by a proteomic approach, with morphogenic and therapeutic implications. *Ann. Clin. Lab. Sci.* 33: 131-141.