SANTA CRUZ BIOTECHNOLOGY, INC.

AT_1 (F-3): sc-365493

SANTA CRUZ BIOTECHNOLOGY
The Power to Question

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, AT_1 and AT_2, most of the major cardiovascular effects seem to be mediated through AT_1. Molecular cloning of the AT_1 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 AT_1 has been shown to activate the JAK/Stat pathway involving a direct interaction between JAK2 and AT_1 as demonstrated by coimmunprecipitation. The AT_1 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. Murphy, T.J., et al. 1991. Isolation of a cDNA encoding the vascular type-1 Angiotensin II receptor. Nature 351: 233-236.
2. Tsuda, T., et al. 1991. Vasoconstrictor-induced protein-tyrosine phosphorylation in cultured vascular smooth muscle cells. FEBS Lett. 285: 44-48.
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: AGTR1 (human) mapping to 3q24; Agtr1b (mouse) mapping to 3 A2.

SOURCE

AT_1 (F-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 10-29 within an N-terminal extracellular domain of AT_1 of human origin.

PRODUCT

Each vial contains 200 µg IgM 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

AT_1 (F-3) is recommended for detection of AT_1 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

AT_1 (F-3) is also recommended for detection of AT_1 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for AT_1 siRNA (h): sc-29750, AT_1 siRNA (m): sc-29751, AT_1 siRNA (r): sc-155992, AT_1 shRNA Plasmid (h): sc-29750-SH, AT_1 shRNA Plasmid (m): sc-29751-SH, AT_1 shRNA Plasmid (r): sc-155992-SH, AT_1 shRNA (h) Lentiviral Particles: sc-29750-V, AT_1 shRNA (m) Lentiviral Particles: sc-29751-V and AT_1 shRNA (r) Lentiviral Particles: sc-155992-V.

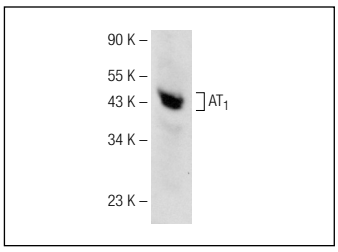
Molecular Weight of AT_1: 43 kDa.

Positive Controls: CCRF-CEM cell lysate: sc-2225, THP-1 cell lysate: sc-2238 or A549 cell lysate: sc-2413.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgM-HRP: sc-2064 (dilution range: 1:500-1:5,000), TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein L PLUS-Agarose: sc-2336 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-mouse IgM-FITC: sc-2082 (dilution range: 1:100-1:400) or goat anti-mouse IgM-TR: sc-2983 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



AT_1 (F-3): sc-365493. Western blot analysis of AT_1 expression in A549 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Karpe, P.A., et al. 2012. Insulin resistance induces a segmental difference in thoracic and abdominal aorta: differential expression of AT_1 and AT_2 receptors. J. Hypertens. 30: 132-146.

RESEARCH USE

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