

AT₁ (C-18): sc-31181

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.

CHROMOSOMAL LOCATION

Genetic locus: AGTR1 (human) mapping to 3q24; Agtr1b (mouse) mapping to 3 A2.

SOURCE

AT₁ (C-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping within a C-terminal cytoplasmic domain of 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.

Blocking peptide available for competition studies, sc-31181 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

AT₁ (C-18) is recommended for detection of AT₁ types 1A and 1B 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).

AT₁ (C-18) is also recommended for detection of AT₁ types 1A and 1B in additional species, including equine, canine, bovine and porcine.

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

Molecular Weight of AT₁: 43 kDa.

Positive Controls: THP-1 cell lysate: sc-2238, HuT 78 whole cell lysate: sc-2208 or CCRF-CEM cell lysate: sc-2225.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

- Ren, L., et al. 2010. The inhibitory effects of rosiglitazone on cardiac hypertrophy through modulating the renin-angiotensin system in diet-induced hypercholesterolemic rats. *Cell Biochem. Funct.* 28: 58-65.
- Villar-Cheda, B., et al. 2010. Nigral and striatal regulation of angiotensin receptor expression by dopamine and angiotensin in rodents: implications for progression of Parkinson's disease. *Eur. J. Neurosci.* 32: 1695-1706.
- Villar-Cheda, B., et al. 2012. Aging-related changes in the nigral angiotensin system enhances proinflammatory and pro-oxidative markers and 6-OHDA-induced dopaminergic degeneration. *Neurobiol. Aging* 33: 204.e1-211.e1.
- Zhang, T.L., et al. 2012. The neuroprotective effect of losartan through inhibiting AT₁/ASK1/MKK4/JNK3 pathway following cerebral I/R in rat hippocampal CA1 region. *CNS Neurosci. Ther.* 18: 981-987.
- Gao, H., et al. 2012. Maternal protein restriction reduces expression of angiotensin I-converting enzyme 2 in rat placental labyrinth zone in late pregnancy. *Biol. Reprod.* 86: 31.
- Rodriguez-Perez, A.I., et al. 2012. Dopaminergic neuroprotection of hormonal replacement therapy in young and aged menopausal rats: role of the brain angiotensin system. *Brain* 135: 124-138.
- Rodriguez-Perez, A.I., et al. 2012. Dopaminergic degeneration is enhanced by chronic brain hypoperfusion and inhibited by angiotensin receptor blockade. *Age* 35: 1675-1690.

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.



Try **AT₁ (1E10-1A9): sc-81671**, our highly recommended monoclonal alternative to AT₁ (C-18).