

# AT<sub>2</sub> (H-143): sc-9040

## 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<sub>1</sub> and AT<sub>2</sub>, most of the major cardiovascular effects seem to be mediated through AT<sub>1</sub>. Molecular cloning of the AT<sub>1</sub> 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 $\gamma$  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<sub>1</sub> has been shown to activate the JAK/Stat pathway involving a direct interaction between JAK2 and AT<sub>1</sub> as demonstrated by coimmunoprecipitation. The AT<sub>1</sub> 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: AGTR2 (human) mapping to Xq23; Agtr2 (mouse) mapping to X A2.

## SOURCE

AT<sub>2</sub> (H-143) is a rabbit polyclonal antibody raised against amino acids 221-363 of AT<sub>2</sub> of human origin.

## PRODUCT

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

Available as agarose conjugate for immunoprecipitation, sc-9040 AC, 500  $\mu$ g/0.25 ml agarose in 1 ml.

## APPLICATIONS

AT<sub>2</sub> (H-143) is recommended for detection of AT<sub>2</sub> of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (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<sub>2</sub> (H-143) is also recommended for detection of AT<sub>2</sub> in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for AT<sub>2</sub> siRNA (h): sc-29752, AT<sub>2</sub> siRNA (m): sc-29753, AT<sub>2</sub> shRNA Plasmid (h): sc-29752-SH, AT<sub>2</sub> shRNA Plasmid (m): sc-29753-SH, AT<sub>2</sub> shRNA (h) Lentiviral Particles: sc-29752-V and AT<sub>2</sub> shRNA (m) Lentiviral Particles: sc-29753-V.

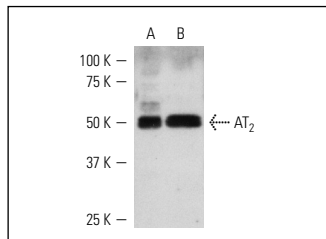
Molecular Weight (predicted) of AT<sub>2</sub>: 41 kDa.

Molecular Weight (observed) of AT<sub>2</sub>: 50 kDa.

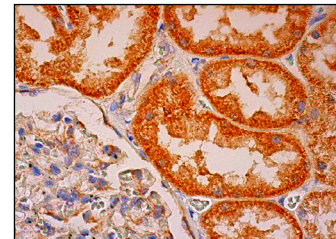
## STORAGE

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

## DATA



AT<sub>2</sub> (H-143): sc-9040. Western blot analysis of AT<sub>2</sub> expression in Hep G2 whole cell lysate (A) and mouse liver extract (B).



AT<sub>2</sub> (H-143): sc-9040. Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic staining of cells in glomeruli and faint cytoplasmic staining of cells in tubules.

## SELECT PRODUCT CITATIONS

- Lorenzo, O., et al. 2002. Angiotensin III activates nuclear transcription factor- $\kappa$ B in cultured mesangial cells mainly via AT<sub>2</sub> receptors: studies with AT<sub>1</sub> receptor-knockout mice. *J. Am. Soc. Nephrol.* 13: 1162-1171.
- Chan, J.Y., et al. 2002. Augmented upregulation by c-fos of angiotensin subtype 1 receptor in nucleus tractus solitarii of spontaneously hypertensive rats. *Hypertension* 40: 335-341.
- 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.
- Nogueira-Silva, C., et al. 2012. Local fetal lung renin-angiotensin system as a target to treat congenital diaphragmatic hernia. *Mol. Med.* 18: 231-243.
- 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.
- 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.e1-204.11.
- Yim, H.E., et al. 2012. Postnatal early overnutrition dysregulates the intrarenal renin-angiotensin system and extracellular matrix-linked molecules in juvenile male rats. *J. Nutr. Biochem.* 23: 937-945.
- López-Aguilera, F., et al. 2012. Hypoxic preconditioning induces an AT<sub>2</sub>-R/VEGFR-2(Flk-1) interaction in the neonatal brain microvasculature for neuroprotection. *Neuroscience* 216: 1-9.
- Anand, U., et al. 2013. Angiotensin II type 2 receptor (AT<sub>2</sub> R) localization and antagonist-mediated inhibition of capsaicin responses and neurite outgrowth in human and rat sensory neurons. *Eur. J. Pain* 17: 1012-1026.

## RESEARCH USE

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