SANTA CRUZ BIOTECHNOLOGY, INC.

AT_1 (G-3): sc-515884

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. PLCγ 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 coimmunoprecipitation. 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.

CHROMOSOMAL LOCATION

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

SOURCE

AT_1 (G-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 313-337 within a C-terminal cytoplasmic domain of AT_1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

AT_1 (G-3) is available conjugated to agarose (sc-515884 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-515884 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515884 PE), fluorescein (sc-515884 FITC), Alexa Fluor® 488 (sc-515884 AF488), Alexa Fluor® 546 (sc-515884 AF546), Alexa Fluor® 594 (sc-515884 AF594) or Alexa Fluor® 647 (sc-515884 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-515884 AF680) or Alexa Fluor® 790 (sc-515884 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

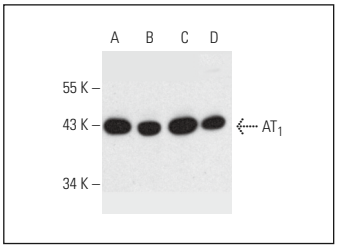
APPLICATIONS

AT_1 (G-3) is recommended for detection of AT_1 types 1A and 1B of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

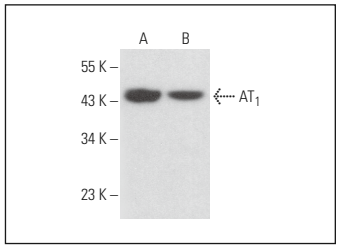
Suitable for use as control antibody for AT_1 siRNA (h): sc-29750, AT_1 siRNA (m): sc-29751, AT_1 siRNA (r): sc-155992, AT_1 shRNA Plasmid (h): sc-29750-SH, AT_1 shRNA Plasmid (m): sc-29751-SH, AT_1 shRNA Plasmid (r): sc-155992-SH, AT_1 shRNA (h) Lentiviral Particles: sc-29750-V, AT_1 shRNA (m) Lentiviral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

Molecular Weight of AT_1: 43 kDa.

DATA



AT_1 (G-3): sc-515884. Western blot analysis of AT_1 expression in A549 (**A**), NIH/3T3 (**B**), SW-13 (**C**) and HeLa (**D**) whole cell lysates.



AT_1 (G-3): sc-515884. Western blot analysis of AT_1 expression in A-10 (**A**) and NTERA-2 cl.D1 (**B**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Sun, S., et al. 2019. Gentisic acid prevents the transition from pressure overload-induced cardiac hypertrophy to heart failure. Sci. Rep. 9: 3018.
2. Diaz-Ruiz, C., et al. 2020. Aging-related overactivity of the Angiotensin/AT_1 axis decreases sirtuin 3 levels in the *Substantia nigra,* which induces vulnerability to oxidative stress and neurodegeneration. J. Gerontol. A Biol. Sci. Med. Sci. 416-424.
3. Chen, J., et al. 2020. Mechanism analysis of a novel ACE-inhibitory peptide from *Isochrysis zhanjiangensis* microalgae for suppressing vascular injury in HUVEC. J. Agric. Food Chem. 68: 4411-4423.
4. Pizzatto, L.N., et al. 2020. Angiotensin II regulates proliferation and function of stem cells of apical papilla. J. Endod. 46: 810-817.
5. Macedo, L.M., et al. 2021. Effect of angiotensin II and angiotensin-(1-7) on proliferation of stem cells from human dental apical papilla. J. Cell. Physiol. 236: 366-378.
6. Poasakate, A., et al. 2021. Genistein prevents nitric oxide deficiency-induced cardiac dysfunction and remodeling in rats. Antioxidants 10: 237.

RESEARCH USE

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