SANTA CRUZ BIOTECHNOLOGY, INC.

α_{1A}-AR (4D8): sc-100291

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

α_{1A}-adrenergic receptors (α_{1A}-ARs) mediate actions in the sympathetic nervous system through the binding of the catecholamines, epinephrine and norepinephrine. α_{1A}-AR (previously designated α_{1C}-AR) couples to $G_{q/11}$ and regulates blood pressure due to changes in vascular tone and cardiac output. Alternative splicing of the ADRA1A gene generates four isoforms with distinct C-termini, and the different expression profile of these subtypes produces distinct patterns of activation. α_{1A}-AR transcripts are abundant in heart, brain, liver and prostate. α_{1A}-AR transcript sizes of 6.0, 4.0, 3.0, and 2.0 kb have been detected in liver. Transcripts of 6.0, 4.0 and 3.0 kb have been detected in heart, and transcripts of 6.0 and 4.0 kb have been detected in prostate.

CHROMOSOMAL LOCATION

Genetic locus: ADRA1A (human) mapping to 8p21.2; Adra1a (mouse) mapping to 14 D1.

SOURCE

α_{1A}-AR (4D8) is a mouse monoclonal antibody raised against amino acids 1-28 of α_{1A}-AR of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

α_{1A}-AR (4D8) is recommended for detection of α_{1A}-AR 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for α_{1A}-AR siRNA (h): sc-39858, α_{1A}-AR siRNA (m): sc-39859, α_{1A}-AR shRNA Plasmid (h): sc-39858-SH, α_{1A}-AR shRNA Plasmid (m): sc-39859-SH, α_{1A}-AR shRNA (h) Lentiviral Particles: sc-39858-V and α_{1A}-AR shRNA (m) Lentiviral Particles: sc-39859-V.

Molecular Weight of α_{1A}-AR: 52 kDa.

Positive Controls: HL-60 whole cell lysate: sc-2209, PC-3 cell lysate: sc-2220 or Hep G2 cell lysate: sc-2227.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

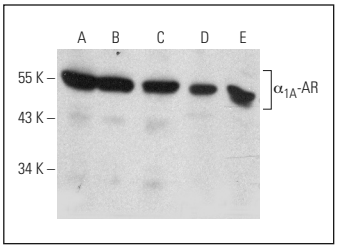
STORAGE

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.

DATA



α_{1A}-AR (4D8): sc-100291. Western blot analysis of α_{1A}-AR expression in HL-60 (**A**), PC-3 (**B**) and Hep G2 (**C**) whole cell lysates and mouse brain (**D**) and rat brain (**E**) tissue extracts.

SELECT PRODUCT CITATIONS

1. Siejka, A., et al. 2010. Mechanisms of inhibition of human benign prostatic hyperplasia *in vitro* by the luteinizing hormone-releasing hormone antagonist cetrorelix. BJU Int. 106: 1382-1388.
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3. Hennenberg, M., et al. 2013. Noradrenaline induces binding of Clathrin light chain A to α_1-adrenoceptors in the human prostate. Prostate 73: 715-723.
4. Wang, Y., et al. 2015. Inhibition of prostate smooth muscle contraction and prostate stromal cell growth by the inhibitors of Rac, NSC23766 and EHT1864. Br. J. Pharmacol. 172: 2905-2917.
5. Shirasaki, H., et al. 2016. Immunohistochemical localization of α and β adrenergic receptors in the human nasal turbinate. Auris Nasus Larynx 43: 309-314.
6. Mendes, L.V.P., et al. 2017. Long-term effect of a chronic low-protein multideficient diet on the heart: hypertension and heart failure in chronically malnourished young adult rats. Int. J. Cardiol. 238: 43-56.
7. Walther, S., et al. 2018. Adreno-muscarinic synergy in the male human urinary outflow tract. Neurourol. Urodyn. 37: 2128-2134.
8. He, W., et al. 2020. Alterations in the phosphodiesterase type 5 pathway and oxidative stress correlate with erectile function in spontaneously hypertensive rats. J. Cell. Mol. Med. 24: 14280-14292.
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PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.