

α_2A -AR (C-19): sc-1478

The Power to Question

BACKGROUND

α_2A -adrenergic receptors (AR), which are members of the G protein-coupled receptor superfamily, regulate neurotransmitter release from sympathetic nerves in the heart, and from adrenergic neurons in the central nervous system. α_2A -AR regulates the phosphorylation of microtubule-associated protein 2, which in turn mediates dendrite growth of cortical neurons. α_2A -AR also contributes to feedback inhibition of pain hypersensitivity.

REFERENCES

1. Hein, L., et al. 1999. Two functionally distinct α_2A -adrenergic receptors regulate sympathetic neurotransmission. *Nature* 402: 181-184.
2. Mansikka, H., et al. 2004. α_2A -adrenoceptors contribute to feedback inhibition of capsaicin-induced hyperalgesia. *Anesthesiology* 101: 185-190.
3. Ihalainen, J.A., et al. 2004. *In vivo* regulation of dopamine and noradrenaline release by α_2A -adrenoceptors in the mouse nucleus accumbens. *J. Neurochem.* 91: 49-56.

CHROMOSOMAL LOCATION

Genetic locus: ADRA2A (human) mapping to 10q25.2, ADRA2B (human) mapping to 2q11.1; Adra2a (mouse) mapping to 19 D2, Adra2b (mouse) mapping to 2F1.

SOURCE

α_2A -AR (C-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of α_2A -AR 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-1478 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

α_2A -AR (C-19) is recommended for detection of adrenergic receptor α_2A , and to a lesser extent, α_2B 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).

α_2A -AR (C-19) is also recommended for detection of adrenergic receptor α_2A , and to a lesser extent, α_2B in additional species, including bovine and porcine.

Molecular Weight of α_2A -AR: 70 kDa.

Positive Controls: KNRK whole cell lysate: sc-2214, rat adrenal gland extract: sc-364802 or mouse heart extract: sc-2254.

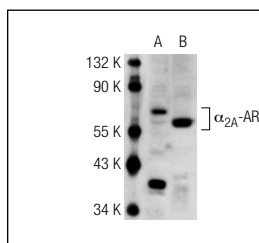
STORAGE

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

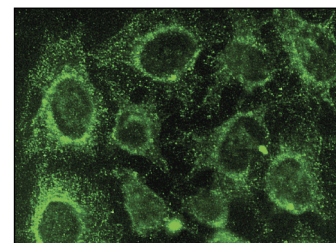
RESEARCH USE

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

DATA



α_2A -AR (C-19): sc-1478. Western blot analysis of α_2A -AR expression in KNRK whole cell lysate (A) and rat adrenal gland tissue extract (B).



α_2A -AR (C-19): sc-1478. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Hou, Y., et al. 2002. Immunostaining of cholinergic pontomesencephalic neurons for α_2A versus α_2B -adrenergic receptors suggests different sleep-wake state activities and roles. *Neuroscience* 114: 517.
2. Francis, H., et al. 2007. The α_2 -adrenergic receptor agonist UK 14,304 inhibits secretin-stimulated ductal secretion by downregulation of the cAMP system in bile duct-ligated rats. *Am. J. Physiol. Cell Physiol.* 293: C1252-C1262.
3. Ampatzis, K., et al. 2008. Neuronal and glial localization of α_2A -adrenoceptors in the adult zebrafish (*Danio rerio*) brain. *J. Comp. Neurol.* 508: 72-93.
4. Tan, M., et al. 2009. p38^{MAPK} and β -arrestin-2 mediate functional interactions between endogenous micro-opioid and α_2A -adrenergic receptors in neurons. *J. Biol. Chem.* 284: 6270-6281.
5. Bhuiyan, M.E., et al. 2009. Complex cardiovascular actions of α -adrenergic receptors expressed in the nucleus tractus solitarius of rats. *Exp. Physiol.* 94: 773-784.
6. Ampatzis, K. and Dermon, C.R. 2010. Regional distribution and cellular localization of β_2 -adrenoceptors in the adult zebrafish brain (*Danio rerio*). *J. Comp. Neurol.* 518: 1418-1441.
7. Roh, D.H., et al. 2010. Activation of spinal α_2 -adrenoceptors, but not mu-opioid receptors, reduces the intrathecal N-methyl-D-aspartate-induced increase in spinal NR1 subunit phosphorylation and nociceptive behaviors in the rat. *Anesth. Analg.* 110: 622-629.
8. Estrany, M.E., et al. 2011. Isocaloric intake of a high-fat diet modifies adiposity and lipid handling in a sex dependent manner in rats. *Lipids Health Dis.* 10: 52.
9. Gill, D.A., et al. 2012. Low-dose neonatal domoic acid causes persistent changes in behavioural and molecular indicators of stress response in rats. *Behav. Brain Res.* 230: 409-417.
10. Crooke, A., et al. 2013. Melatonin and its analogue 5-MCA-NAT potentiate adrenergic receptor-mediated ocular hypotensive effects in rabbits: Significance for combination therapy in glaucoma. *J. Pharmacol. Exp. Ther.* 346: 138-145.