

**BACKGROUND**

$\alpha_2A$  adrenergic receptors (AR) regulate neurotransmitter release from sympathetic nerves in the heart, and from adrenergic neurons in the central nervous system.  $\alpha_2A$ -AR regulates the phosphorylation of microtubule-associated protein 2, which in turn mediates dendrite growth of cortical neurons.  $\alpha_2A$ -AR also contributes to feedback inhibition of pain hypersensitivity.

**REFERENCES**

- Hein, L., et al. 1999. Two functionally distinct  $\alpha_2A$  adrenergic receptors regulate sympathetic neurotransmission. *Nature* 402: 181-184.
- Song, Z.M., et al. 2004.  $\alpha_2A$  adrenoceptors regulate phosphorylation of microtubule-associated protein-2 in cultured cortical neurons. *Neuroscience* 123: 405-418.
- Mansikka, H., et al. 2004.  $\alpha_2A$ -adrenoceptors contribute to feedback inhibition of capsaicin-induced hyperalgesia. *Anesthesiology* 101: 185-190.
- Ihalainen, J.A., et al. 2004. *In vivo* regulation of dopamine and noradrenaline release by  $\alpha_2A$ -adrenoceptors in the mouse nucleus accumbens. *J. Neurochem.* 91: 49-56.
- Ma, D., et al. 2004. Dexmedetomidine produces its neuroprotective effect via the  $\alpha_2A$ -adrenoceptor subtype. *Eur. J. Pharmacol.* 502: 87-97.
- Olli-Lahdesmaki, T., et al. 2004. Ligand-induced  $\alpha_2$ -adrenoceptor endocytosis: relationship to  $G_i$  protein activation. *Biochem. Biophys. Res. Commun.* 321: 226-233.
- Shishkina, G.T., et al. 2004. Influence of neonatal short-term reduction in brainstem  $\alpha_2A$ -adrenergic receptors on receptor ontogenesis, acoustic startle reflex, and prepulse inhibition in rats. *Behav. Neurosci.* 118: 1285-1292.
- LocusLink Report (LocusID: 150). <http://www.ncbi.nlm.nih.gov/LocusLink/>

**CHROMOSOMAL LOCATION**

Genetic locus: ADRA2A (human) mapping to 10q25.2; Adra2a (mouse) mapping to 19 D2.

**SOURCE**

$\alpha_2A$ -AR (T-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within a cytoplasmic domain of  $\alpha_2A$ -AR 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.

Blocking peptide available for competition studies, sc-31357 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

**STORAGE**

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

**APPLICATIONS**

$\alpha_2A$ -AR (T-15) is recommended for detection of  $\alpha_2A$ -AR 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

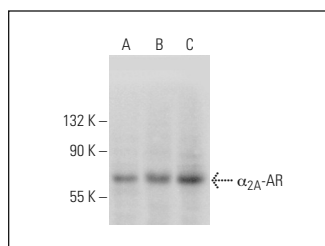
Suitable for use as control antibody for  $\alpha_2A$ -AR siRNA (h): sc-39862,  $\alpha_2A$ -AR siRNA (m): sc-39863,  $\alpha_2A$ -AR shRNA Plasmid (h): sc-39862-SH,  $\alpha_2A$ -AR shRNA Plasmid (m): sc-39863-SH,  $\alpha_2A$ -AR shRNA (h) Lentiviral Particles: sc-39862-V and  $\alpha_2A$ -AR shRNA (m) Lentiviral Particles: sc-39863-V.

Molecular Weight of  $\alpha_2A$ -AR: 70 kDa.

Positive Controls: mouse heart extract: sc-2254, rat heart extract: sc-2393 or rat adrenal gland extract: sc-364802.

**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.

**DATA**

$\alpha_2A$ -AR (T-15): sc-31357. Western blot analysis of  $\alpha_2A$ -AR expression in rat adrenal gland (A), mouse heart (B) and rat heart (C) tissue extracts.

**SELECT PRODUCT CITATIONS**

- Xiao, Z., et al. 2009. Noradrenergic depression of neuronal excitability in the entorhinal cortex via activation of TREK-2  $K^+$  channels. *J. Biol. Chem.* 284: 10980-10991.

**RESEARCH USE**

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