

SR-2A (M-75): sc-50397

BACKGROUND

Serotonin (also designated 5-hydroxytryptamine or 5-HT) is a molecule that functions as a neurotransmitter, a hormone and a mitogen, and it is predominantly expressed in the gut, platelets and central nervous system (CNS). In the CNS, serotonin modulates several processes, including anxiety, sleep, appetite, behavior and drug abuse. In platelets and gut, serotonin plays a major role in cardiovascular function and motility of the gastrointestinal tract, respectively. Serotonin mediates its effects through several of G protein-coupled receptors, designated 5-HT receptors or alternatively SR receptors. The SR-2 receptors are comprised of three subtypes, SR-2A, SR-2B and SR-2C, which activate phospholipase C and release intracellular stores of calcium in response to serotonin. SR-2A has a specific role in tracheal smooth muscle contraction, bronchoconstriction and mediating aldosterone production, and it is also thought to play a role in several psychiatric disorders, including depression and schizophrenia. SR-2B is expressed in embryonic and adult cardiovascular tissues, gut and brain and plays an important role in the pathology of cardiac disorders. SR-2C is thought to mediate the effects of atypical anti-psychotic drugs.

REFERENCES

1. Watts, S.W., et al. 1994. Contractile SR-2A receptor signal transduction in guinea pig trachea: importance of protein kinase C and extracellular and intracellular calcium but not phosphoinositide hydrolysis. *J. Pharmacol. Exp. Ther.* 271: 832-844.
2. Goppelt-Strube, M., et al. 1998. Signaling pathways mediating induction of the early response genes prostaglandin G/H synthase-2 and EGR-1 by serotonin via 5-HT_{2A} receptors. *J. Cell. Physiol.* 175: 341-347.
3. Nebigil, C.G., et al. 2000. SR-2B receptor is required for heart development. *Proc. Natl. Acad. Sci. USA* 97: 9508-9513.
4. Contesse, V., et al. 2000. Role of 5-HT in the regulation of the brain-pituitary-adrenal axis: effects of 5-HT on adrenocortical cells. *Can. J. Physiol. Pharmacol.* 78: 967-983.
5. Xu, T., et al. 2000. Cellular localization of SR-2A (5HT_{2A}) receptors in the rat brain. *Brain Res. Bull.* 51: 499-505.
6. Herrick-Davis, K., et al. 2000. Inverse agonist activity of atypical anti-psychotic drugs at human 5-hydroxytryptamine 2C receptors. *J. Pharmacol. Exp. Ther.* 295: 226-232.
7. Gingrich, J.A., et al. 2001. Dissecting the role of the serotonin system in neuropsychiatric disorders using knockout mice. *Psychopharmacology* 155: 1-10.

CHROMOSOMAL LOCATION

Genetic locus: Htr2a (mouse) mapping to 14 D3.

SOURCE

SR-2A (M-75) is a rabbit polyclonal antibody raised against amino acids 1-75 mapping within an N-terminal extracellular domain of SR-2A of mouse origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

SR-2A (M-75) is recommended for detection of serotonin 2A receptor of mouse and rat 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)], 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 SR-2A siRNA (m): sc-42232, SR-2A shRNA Plasmid (m): sc-42232-SH and SR-2A shRNA (m) Lentiviral Particles: sc-42232-V.

Molecular Weight of SR-2A: 55 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Pavone, L.M., et al. 2009. Serotonin transporter gene deficiency is associated with sudden death of newborn mice through activation of TGF-β1 signalling. *J. Mol. Cell. Cardiol.* 47: 691-697.
2. Sheikhanlou-Milan, H., et al. 2010. Effects of electrical stimulation of dorsal raphe nucleus on neuronal response properties of barrel cortex layer IV neurons following long-term sensory deprivation. *Neurosci. Bull.* 26: 388-394.
3. Pavone, L.M., et al. 2012. Role of serotonergic system in the pathogenesis of fibrosis in canine idiopathic inflammatory myopathies. *Neuromuscul. Disord.* 22: 549-557.

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.