

SR-2A (A-4): sc-166775

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 antipsychotic drugs.

REFERENCES

1. Watts, S.W., et al. 1994. Contractile serotonin-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.

CHROMOSOMAL LOCATION

Genetic locus: HTR2A (human) mapping to 13q14.2; Htr2a (mouse) mapping to 14 D3.

SOURCE

SR-2A (A-4) is a mouse monoclonal antibody raised against amino acids 1-75 mapping within an N-terminal extracellular domain of SR-2A of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

SR-2A (A-4) is available conjugated to agarose (sc-166775 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-166775 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166775 PE), fluorescein (sc-166775 FITC), Alexa Fluor® 488 (sc-166775 AF488), Alexa Fluor® 546 (sc-166775 AF546), Alexa Fluor® 594 (sc-166775 AF594) or Alexa Fluor® 647 (sc-166775 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166775 AF680) or Alexa Fluor® 790 (sc-166775 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

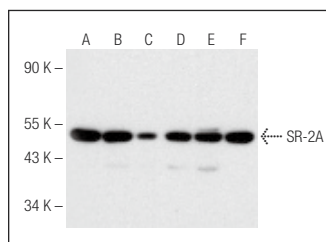
SR-2A (A-4) is recommended for detection of serotonin 2A receptor (5-HT₂) of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (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 (h): sc-42231, SR-2A siRNA (m): sc-42232, SR-2A shRNA Plasmid (h): sc-42231-SH, SR-2A shRNA Plasmid (m): sc-42232-SH, SR-2A shRNA (h) Lentiviral Particles: sc-42231-V and SR-2A shRNA (m) Lentiviral Particles: sc-42232-V.

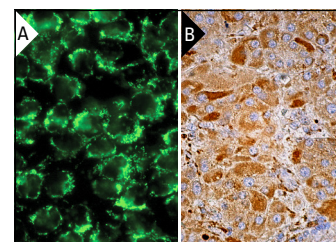
Molecular Weight of SR-2A: 55 kDa.

Positive Controls: HT-1080 whole cell lysate: sc-364183, HEK293 whole cell lysate: sc-45136 or PC-3 cell lysate: sc-2220.

DATA



SR-2A (A-4): sc-166775. Western blot analysis of SR-2A expression in HT-1080 (A), HEK293 (B), PC-3 (C), JAR (D), U-87 MG (E) and T24 (F) whole cell lysates.



SR-2A (A-4): sc-166775. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human adrenal gland tissue showing cytoplasmic staining of glandular cells (B).

SELECT PRODUCT CITATIONS

1. Aira, Z., et al. 2012. Time-dependent cross talk between spinal serotonin 5-HT_{2A} receptor and mGluR1 subserves spinal hyperexcitability and neuropathic pain after nerve injury. *J. Neurosci.* 32: 13568-135681.
2. Cao, L., et al. 2019. Identification of serotonin 2A receptor as a novel HCV entry factor by a chemical biology strategy. *Protein Cell* 10: 178-195.
3. Yu, B., et al. 2021. Serotonin 5-HT_{2A} receptor activity mediates adipocyte differentiation through control of adipogenic gene expression. *Sci. Rep.* 11: 19714.
4. Dai, Y.W., et al. 2022. Meteorin links the bone marrow hypoxic state to hematopoietic stem/progenitor cell mobilization. *Cell Rep.* 40: 111361.
5. Wang, H., et al. 2023. Antidepressant effect of 4-Butyl-α-agarofuran via HPA axis and serotonin system. *Brain Res. Bull.* 198: 3-14.

RESEARCH USE

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

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