SANTA CRUZ BIOTECHNOLOGY, INC.

mAChR M2 (M2-2-B3): sc-33712

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The muscarinic acetylcholine receptors (mAChR) mediate a variety of cellular responses, including inhibition of adenylate cyclase, breakdown of phosphoinositides and modulation of potassium channels. The mAChRs transduce signals by coupling to G proteins, which then modulate several downstream effector proteins and ion channels. Five mAChR subtypes have been identified, designated M1 to M5. The five receptor subtypes show distinct patterns of tissue distribution, as well as distinct pharmacological and functional properties. The amino acid sequence of each mAChR subtype reflects a structure that is characteristic of G protein-coupled receptors, consisting of seven highly conserved transmembrane segments and a large intracellular region unique to each subtype, which constitutes the effector-coupling domain.

REFERENCES

1. Peralta, E.G., et al. 1987. Primary structure and biochemical properties of an M2 muscarinic receptor. Science 236: 600-605.
2. Liao, C.F., et al. 1989. Molecular cloning and expression of a fifth muscarinic acetylcholine receptor. J. Biol. Chem. 264: 7328-7337.
3. Hulme, E.C. 1990. Muscarinic acetylcholine receptors: typical G coupled receptors. Symp. Soc. Exp. Biol. 44: 39-54.
4. Hulme, E.C., et al. 1991. Muscarinic acetylcholine receptors: structure and function. Biochem. Soc. Trans. 19: 133-138.
5. Caulfield, M.P. 1993. Muscarinic receptor-characterization, coupling and function. Pharmacol. Ther. 58: 319-379.
6. Brann, M.R., et al. 1993. Muscarinic acetylcholine receptor subtypes: localization and structure/function. Prog. Brain Res. 98: 121-127.
7. Tice, M.A., et al. 1996. Distribution of muscarinic receptor subtypes in rat brain from postnatal to old age. Brain Res. Dev. Brain Res. 92: 70-76.

CHROMOSOMAL LOCATION

Genetic locus: CHRM2 (human) mapping to 7q33; Chrm2 (mouse) mapping to 6 B1.

SOURCE

mAChR M2 (M2-2-B3) is a rat monoclonal antibody raised against i3 loop of M2 receptor fusion protein.

PRODUCT

Each vial contains 200 µg IgG_{2a} in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

mAChR M2 (M2-2-B3) is available conjugated to agarose (sc-33712 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-33712 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-33712 PE), fluorescein (sc-33712 FITC), Alexa Fluor® 488 (sc-33712 AF488), Alexa Fluor® 546 (sc-33712 AF546), Alexa Fluor® 594 (sc-33712 AF594) or Alexa Fluor® 647 (sc-33712 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-33712 AF680) or Alexa Fluor® 790 (sc-33712 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

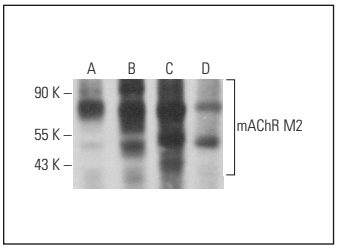
mAChR M2 (M2-2-B3) is recommended for detection of mAChR M2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunohistochemistry (frozen sections) (starting dilution 1:50, dilution range 1:50-1:500); not recommended for immunofluorescence.

Suitable for use as control antibody for mAChR M2 siRNA (h): sc-35831, mAChR M2 siRNA (m): sc-35832, mAChR M2 shRNA Plasmid (h): sc-35831-SH, mAChR M2 shRNA Plasmid (m): sc-35832-SH, mAChR M2 shRNA (h) Lentiviral Particles: sc-35831-V and mAChR M2 shRNA (m) Lentiviral Particles: sc-35832-V.

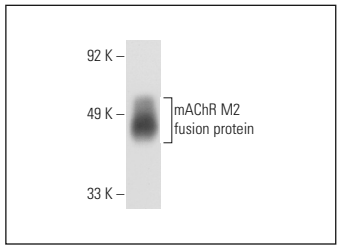
Molecular Weight of mAChR M2: 70-75 kDa.

Positive Controls: mouse cerebellum extract: sc-2403, mouse lung extract: sc-2390 or rat brain extract: sc-2392.

DATA



mAChR M2 (M2-2-B3): sc-33712. Western blot analysis of mAChR M2 expression in human brain (**A**), mouse cerebellum (**B**), mouse lung (**C**) and rat brain (**D**) tissue extracts.



mAChR M2 (M2-2-B3): sc-33712. Western blot analysis of human recombinant mAChR M2 fusion protein.

SELECT PRODUCT CITATIONS

1. Yu, S., et al. 2021. Autonomic regulation of imbalance-induced myocardial fibrosis and its mechanism in rats with cirrhosis. Exp. Ther. Med. 22: 1040.
2. Zhu, X., et al. 2022. Astragaloside IV protects detrusor from partial bladder outlet obstruction-induced oxidative stress by activating mitophagy through AMPK-ULK1 pathway. Oxid. Med. Cell. Longev. 2022: 5757367.

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.

PROTOCOLS

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