

AChR β 1 (120): sc-65788

BACKGROUND

Members of the ligand-gated ion channel receptor family are characterized by their fast transmitting response to neurotransmitters. Two important members of this family are the nicotinic acetylcholine and glutamate receptors, both of which are composed of five homologous subunits forming a transmembrane aqueous pore. These transmembrane receptors change conformation in response to their cognate neurotransmitter. Nicotinic acetylcholine receptors (AChRs) are found at the postsynaptic membrane of the neuromuscular junction and bind acetylcholine molecules, allowing ions to move through the pore. Glutamate receptors are found in the postsynaptic membrane of cells in the central nervous system. The activity that is generated at the synapse by the binding of acetylcholine is terminated by acetylcholinesterase, an enzyme that rapidly hydrolyzes acetylcholine. AChR β 1, also known as CHRNB, CMS1D, CMS2A, SCCMS or CHRNB1, is a 501 amino acid protein that belongs to the ligand-gated ionic channel family. Defects in the gene encoding AChR β 1 may be the cause of congenital myasthenic syndrome slow-channel type (SCCMS), which is characterized by muscle weakness affecting the axial and limb muscles, the ocular muscles and the facial and bulbar musculature.

REFERENCES

- Alkondon, M., Rao, K.S. and Albuquerque, E.X. 1988. Acetylcholinesterase reactivators modify the functional properties of the nicotinic acetylcholine receptor ion channel. *J. Pharmacol. Exp. Ther.* 245: 543-556.
- Betz, H. 1990. Ligand-gated ion channels in the brain: the amino acid receptor superfamily. *Neuron* 5: 383-392.
- Baenziger, J.E., Miller, K.W., McCarthy, M.P. and Rothschild, K.J. 1992. Probing conformational changes in the nicotinic acetylcholine receptor by Fourier transform infrared difference spectroscopy. *Biophys. J.* 62: 64-66.
- Daw, N.W., Stein, P.S. and Fox, K. 1993. The role of NMDA receptors in information processing. *Annu. Rev. Neurosci.* 16: 207-222.
- Sargent, P.B. 1993. The diversity of neuronal nicotinic acetylcholine receptors. *Annu. Rev. Neurosci.* 16: 403-443.
- Unwin, N. 1993. Neurotransmitter action: opening of ligand-gated ion channels. *Cell* 72 Suppl: 31-41.
- Stevens, C.F. 1993. Quantal release of neurotransmitter and long-term potentiation. *Cell* 72: 55-63.
- Ramirez-Latorre, J., Yu, C.R., Qu, X., Perin, F., Karlin, A. and Role, L. 1996. Functional contributions of α 5 subunit to neuronal acetylcholine receptor channels. *Nature* 380: 347-351.

STORAGE

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

PROTOCOLS

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

CHROMOSOMAL LOCATION

Genetic locus: CHRNB1 (human) mapping to 17p13.1.

SOURCE

AChR β 1 (120) is a rat monoclonal antibody raised against denatured, purified AChR of torpedo origin.

PRODUCT

Each vial contains 200 μ g IgG₁ in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

AChR β 1 (120) is recommended for detection of nicotinic AChR β 1 of rat, human, and torpedo origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for AChR β 1 siRNA (h): sc-29630, AChR β 1 shRNA Plasmid (h): sc-29630-SH and AChR β 1 shRNA (h) Lentiviral Particles: sc-29630-V.

Molecular Weight of AChR β 1: 55 kDa.

Positive Controls: rat brain extract: sc-2392, IMR-32 cell lysate: sc-2409 or PC-12 cell lysate: sc-2250.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rat IgG-HRP: sc-2006 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-rat IgG-HRP: sc-2032 (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) Immunofluorescence: use goat anti-rat IgG-FITC: sc-2011 (dilution range: 1:100-1:400) or goat anti-rat IgG-TR: sc-2782 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RESEARCH USE

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