SANTA CRUZ BIOTECHNOLOGY, INC.

p-AChRβ1 (Tyr 390): sc-17087

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. AChRβ1, 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 AChRβ1 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

1. Alkondon, M., et al. 1988. Acetylcholinesterase reactivators modify the functional properties of the nicotinic acetylcholine receptor ion channel. J. Pharma. Exp. Ther. 245: 543-556.
2. Betz, H. 1990. Ligand-gated ion channels in the brain: the amino acid receptor superfamily. Neuron 5: 383-392.
3. Baenziger, J.E., et al. 1992. Probing conformational changes in the nicotinic acetylcholine receptor by Fourier transform infrared difference spectroscopy. Biophys. J. 62: 64-66.
4. Daw, N.W., et al. 1993. The role of NMDA receptors in information processing. Annu. Rev. Neurosci. 16: 207-222.

CHROMOSOMAL LOCATION

Genetic locus: CHRNB1 (human) mapping to 17p13.1; Chrnb1 (mouse) mapping to 11 B3.

SOURCE

p-AChRβ1 (Tyr 390) is available as either goat (sc-17087) or rabbit (sc-17087-R) polyclonal affinity purified antibody raised against a short amino acid sequence containing Tyr 390 phosphorylated AChRβ1 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-17087 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

p-AChRβ1 (Tyr 390) is recommended for detection of Tyr 390 phosphorylated AChRβ1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

p-AChRβ1 (Tyr 390) is also recommended for detection of correspondingly phosphorylated AChRβ1 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for AChRβ1 siRNA (h): sc-29630, AChRβ1 siRNA (m): sc-29631, AChRβ1 shRNA Plasmid (h): sc-29630-SH, AChRβ1 shRNA Plasmid (m): sc-29631-SH, AChRβ1 shRNA (h) Lentiviral Particles: sc-29630-V and AChRβ1 shRNA (m) Lentiviral Particles: sc-29631-V.

Molecular Weight of p-AChRβ1: 55 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: for goat primary antibody (sc-17087): 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), for rabbit primary antibody (sc-17087-R): 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 B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Western Blotting Luminol Reagent: sc-2048 and Lambda Phosphatase: sc-200312A. 2) Immunofluorescence: for goat primary antibody (sc-17087): 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, for rabbit primary antibody (sc-17087-R): 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. Friese, M.B., et al. 2007. Synaptic differentiation is defective in mice lacking acetylcholine receptor β-subunit tyrosine phosphorylation. Development 134: 4167-4176.
2. Hamuro, J., et al. 2008. Mutations causing DOK7 congenital myasthenia ablate functional motifs in Dok-7. J. Biol. Chem. 283: 5518-5524.
3. Madhavan, R., et al. 2009. The function of cortactin in the clustering of acetylcholine receptors at the vertebrate neuromuscular junction. PLoS ONE 4: e8478.

STORAGE

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