SANTA CRUZ BIOTECHNOLOGY, INC.

AChRγ (C-18): sc-1453

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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. AChRγ is a 517 amino acid member of the acetylcholine receptor family that plays a role in ligand binding and neuromuscular organogenesis. Mutations in the gene that encodes AChRγ result in Escobar syndrome and a lethal form of multiple pterygium syndrome.

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.
5. Unwin, N. 1993. Neurotransmitter action: opening of ligand-gated ion channels. Cell 72: 31-41.
6. Stevens, C.F. 1993. Quantal release of neurotransmitter and long-term potentiation. Cell 72: 55-63.

CHROMOSOMAL LOCATION

Genetic locus: CHRNG (human) mapping to 2q37.1; Chrng (mouse) mapping to 1 D.

SOURCE

AChRγ (C-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of AChRγ 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-1453 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

AChRγ (C-18) is recommended for detection of the acetylcholine receptor γ subunit of mouse, rat and human 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).

AChRγ (C-18) is also recommended for detection of the acetylcholine receptor γ subunit in additional species, including equine, canine, bovine and porcine.

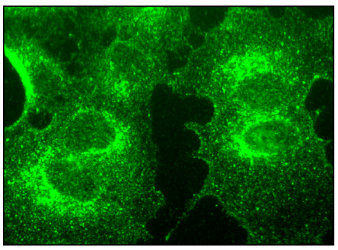
Suitable for use as control antibody for AChRγ siRNA (h): sc-42544, AChRγ siRNA (m): sc-42545, AChRγ shRNA Plasmid (h): sc-42544-SH, AChRγ shRNA Plasmid (m): sc-42545-SH, AChRγ shRNA (h) Lentiviral Particles: sc-42544-V and AChRγ shRNA (m) Lentiviral Particles: sc-42545-V.

Molecular Weight of AChRγ: 58 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: 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), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048.

DATA



AChRγ (C-18): sc-1453. Immunofluorescence staining of formalin-fixed HepG2 cells showing membrane and cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Gattenlöhner, S., et al. 2006. Rhabdomyosarcoma lysis by T cells expressing a human autoantibody-based chimeric receptor targeting the fetal acetylcholine receptor. Cancer Res. 66: 24-28.
2. Gattenlöhner, S. 2006. Rhabdomyosarcoma lysis by T cells expressing a human autoantibody based chimeric receptor targeting the fetal acetylcholine receptors. Verh. Dtsch. Ges. Pathol. 90: 264-276.

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.