

# AChR $\alpha$ 10 (N-18): sc-18277

## 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 $\alpha$ 10, also known as CHRNA10, is a 450 amino acid multi-pass membrane protein expressed in inner-ear tissue, tonsil, immortalized B-cells, cultured T-cells and peripheral blood lymphocytes. AChR $\alpha$ 10 forms a hetero-oligomeric channels in conjunction with AChR $\alpha$ 9 and is considered an ionotropic receptor with a probable role in the modulation of auditory stimuli.

## REFERENCES

- Alkondon, M., Rao, K.S. and Albuquerque, E.X. 1988. Acetylcholine-sterase reactivators modify the functional properties of the nicotinic acetylcholine receptor ion channel. *J. Pharma. Exp. Thera.* 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.
- Unwin, N. 1993. Neurotransmitter action: opening of ligand-gated ion channels. *Cell* 72 Suppl: 31-41.
- Sargent, P.B. 1993. The diversity of neuronal nicotinic acetylcholine receptors. *Ann. Rev. Neurol.* 16: 403-443.
- Daw, N.W., Stein, P.S. and Fox, K. 1993. The role of NMDA receptors in information processing. *Ann. Rev. Neurol.* 16: 207-222.
- 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  $\alpha$ 5 subunit to neuronal acetylcholine receptor channels. *Nature* 380: 347-351.

## CHROMOSOMAL LOCATION

Genetic locus: CHRNA10 (human) mapping to 11p15.4

## SOURCE

AChR $\alpha$ 10 (N-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an extracellular domain of AChR $\alpha$ 10 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-18277 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

AChR $\alpha$ 10 (N-18) is recommended for detection of AChR $\alpha$ 10 of human and rat 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).

AChR $\alpha$ 10 (N-18) is also recommended for detection of AChR $\alpha$ 10 in additional species, including equine, bovine and porcine.

Suitable for use as control antibody for AChR $\alpha$ 10 siRNA (h): sc-105030, AChR $\alpha$ 10 shRNA Plasmid (h): sc-105030-SH and AChR $\alpha$ 10 shRNA (h) Lentiviral Particles: sc-105030-V.

Molecular Weight of AChR $\alpha$ 10: 56 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. 2) Immunofluorescence: 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.

## 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](http://www.scbt.com) or our catalog for detailed protocols and support products.