

CHRN4 (S-15): sc-82815

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. CHRN4 (cholinergic receptor, nicotinic, β 4) is a 498 amino acid member of the ligand-gated ionic channel family. CHRN4 plays a role in the glutamatergic pathway and may be associated with nicotine dependence.

REFERENCES

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2. Shi, J., et al. 2007. No evidence for association between 19 cholinergic genes and bipolar disorder. *Am. J. Med. Genet. B Neuropsychiatr. Genet.* 144B: 715-723.
3. De Marco, E.V., et al. 2007. Further evidence of genetic heterogeneity in families with autosomal dominant nocturnal frontal lobe epilepsy. *Epilepsy Res.* 74: 70-73.
4. Kedmi, M. and Orr-Urtreger, A. 2007. Differential brain transcriptome of β 4 nAChR subunit-deficient mice: is it the effect of the null mutation or the background strain? *Physiol. Genomics* 28: 213-222.
5. Petrakis, S., et al. 2008. Cellular prion protein co-localizes with nAChR β 4 subunit in brain and gastrointestinal tract. *Eur. J. Neurosci.* 27: 612-620.
6. Weiss, R.B., et al. 2008. A candidate gene approach identifies the CHRNA5-A3-B4 region as a risk factor for age-dependent nicotine addiction. *PLoS Genet.* 4: e1000125.
7. Freathy, R.M., et al. 2009. A common genetic variant in the 15q24 nicotinic acetylcholine receptor gene cluster (CHRNA5-CHRNA3-CHRN4) is associated with a reduced ability of women to quit smoking in pregnancy. *Hum. Mol. Genet.* 18: 2922-2927.
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CHROMOSOMAL LOCATION

Genetic locus: CHRN4 (human) mapping to 15q25.1; Chrn4 (mouse) mapping to 9 B.

RESEARCH USE

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

SOURCE

CHRN4 (S-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an extracellular domain of CHRN4 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-82815 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

CHRN4 (S-15) is recommended for detection of CHRN4 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).

CHRN4 (S-15) is also recommended for detection of CHRN4 in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for CHRN4 siRNA (h): sc-72904, CHRN4 siRNA (m): sc-72905, CHRN4 shRNA Plasmid (h): sc-72904-SH, CHRN4 shRNA Plasmid (m): sc-72905-SH, CHRN4 shRNA (h) Lentiviral Particles: sc-72904-V and CHRN4 shRNA (m) Lentiviral Particles: sc-72905-V.

Molecular Weight of CHRN4: 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.

PROTOCOLS

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



Try **CHRN4 (E-3): sc-514315**, our highly recommended monoclonal alternative to CHRN4 (S-15).