

AChR α 4 (A-20): sc-1772

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 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 α 4, also known as EBN, BFNC, EBN1, NACHR, NACRA4, NACHRA4 or CHRNA4, is a 627 amino acid multi-pass membrane protein associated with nocturnal frontal lobe epilepsy type 1 (ENFL1), an autosomal dominant epilepsy characterized by nocturnal seizures with hyperkinetic automatisms and poorly organized stereotyped movements.

CHROMOSOMAL LOCATION

Genetic locus: CHRNA4 (human) mapping to 20q13.33; Chrna4 (mouse) mapping to 2 H4.

SOURCE

AChR α 4 (A-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of AChR α 4 of rat 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-1772 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

AChR α 4 (A-20) is recommended for detection of the acetylcholine receptor α 4 subunit 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), immunohistochemistry (including paraffin-embedded sections) (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 α 4 (A-20) is also recommended for detection of the acetylcholine receptor α 4 subunit in additional species, including equine, canine, bovine and avian.

Suitable for use as control antibody for AChR α 4 siRNA (h): sc-42528, AChR α 4 siRNA (m): sc-42529, AChR α 4 shRNA Plasmid (h): sc-42528-SH, AChR α 4 shRNA Plasmid (m): sc-42529-SH, AChR α 4 shRNA (h) Lentiviral Particles: sc-42528-V and AChR α 4 shRNA (m) Lentiviral Particles: sc-42529-V.

Molecular Weight of AChR α 4: 78 kDa.

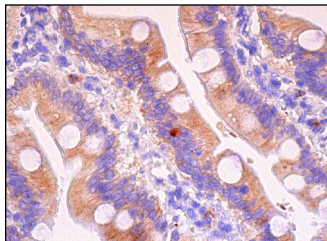
RESEARCH USE

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

STORAGE

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

DATA



AChR α 4 (A-20): sc-1772. Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing cytoplasmic staining of glandular cells

SELECT PRODUCT CITATIONS

- Liu, L., et al. 1998. Neuronal nicotinic acetylcholine receptors in rat trigeminal ganglia. *Brain Res.* 809: 238-245.
- Dourado, M., et al. 2002. Properties of nicotinic receptors underlying Renshaw cell excitation by α -motor neurons in neonatal rat spinal cord. *J. Neurophysiol.* 87: 3117-3125.
- Di Angelantonio, S., et al. 2003. Molecular biology and electrophysiology of neuronal nicotinic receptors of rat chromaffin cells. *Eur. J. Neurosci.* 17: 2313-2322.
- Yu, W.F., et al. 2003. Correlation of oxidative stress and the loss of the nicotinic receptor α 4 subunit in the temporal cortex of patients with Alzheimer's disease. *Neurosci. Lett.* 338: 13-16.
- Xiu, J., et al. 2005. Expression of nicotinic receptors on primary cultures of rat astrocytes and up-regulation of the α 7, α 4 and β 2 subunits in response to nanomolar concentrations of the β -amyloid peptide(1-42). *Neurochem. Int.* 47: 281-290.
- Bermudez, I. and Moroni, M. 2006. Phosphorylation and function of α 4 β 2 receptor. *J. Mol. Neurosci.* 30: 97-98.
- Nilbratt, M., et al. 2007. Retinoic acid and nerve growth factor induce differential regulation of nicotinic acetylcholine receptor subunit expression in SN56 cells. *J. Neurosci. Res.* 85: 504-514.
- Yu, W.F., et al. 2007. Postnatal upregulation of α 4 and α 3 nicotinic receptor subunits in the brain of α 7 nicotinic receptor-deficient mice. *Neuroscience* 146: 1618-1628.

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Try **AChR α 4 (A-6): sc-74519** or **AChR α 4 (299): sc-65862**, our highly recommended monoclonal alternatives to AChR α 4 (A-20).