

AChR α 4 (299): sc-65862

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.

REFERENCES

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CHROMOSOMAL LOCATION

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

SOURCE

AChR α 4 (299) is a rat monoclonal antibody raised against purified AChR from brain tissue of rat origin.

RESEARCH USE

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

PRODUCT

Each vial contains 200 μ g IgG₁ in 1.0 ml PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

AChR α 4 (299) is recommended for detection of nicotinic AChR α 4 of mouse, rat, human and chicken origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

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.

Positive Controls: A-673 cell lysate: sc-2414.

SELECT PRODUCT CITATIONS

- Rose, J.E., et al. 2012. Neuroanatomical evidence for a putative autocrine/paracrine signaling system involving nicotinic acetylcholine receptors, purinergic receptors, and nitric oxide synthase in the airways. *J. Neurosci. Res.* 90: 849-859.
- Xiao, Y., et al. 2016. Inhibited expression of α 4 β 2 nicotinic acetylcholine receptor in blood leukocytes of Chinese patients with vascular dementia and in blood leukocytes as well as the hippocampus of brain from ischemic rats. *Cell. Mol. Neurobiol.* 36: 1377-1387.
- Zhao, L., et al. 2018. Protection against the neurotoxic effects of β -Amyloid peptide on cultured neuronal cells by lovastatin involves elevated expression of α 7 nicotinic acetylcholine receptors and activating phosphorylation of protein kinases. *Am. J. Pathol.* 188: 1081-1093.

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 for detailed protocols and support products.