SANTA CRUZ BIOTECHNOLOGY, INC.

AChRα7 (C-20): sc-1447

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.

CHROMOSOMAL LOCATION

Genetic locus: CHRNA7 (human) mapping to 15q13.3; Chrna7 (mouse) mapping to 7C.

SOURCE

AChRα7 (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of AChRα7 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-1447 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

AChRα7 (C-20) is recommended for detection of AChRα7 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], 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).

AChRα7 (C-20) is also recommended for detection of AChRα7 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for AChRα7 siRNA (h): sc-42532, AChRα7 siRNA (m): sc-42533, AChRα7 siRNA (r): sc-270402, AChRα7 shRNA Plasmid (h): sc-42532-SH, AChRα7 shRNA Plasmid (m): sc-42533-SH, AChRα7 shRNA Plasmid (r): sc-270402-SH, AChRα7 shRNA (h) Lentiviral Particles: sc-42532-V, AChRα7 shRNA (m) Lentiviral Particles: sc-42533-V and AChRα7 shRNA (r) Lentiviral Particles: sc-270402-V.

Molecular Weight of AChRα7: 55 kDa.

Positive Controls: rat brain extract: sc-2392, mouse brain extract: sc-2253 or SK-N-MC cell lysate: sc-2237.

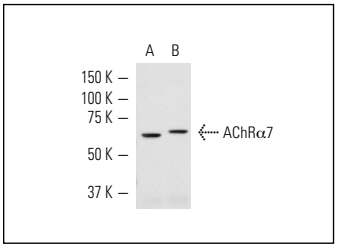
RESEARCH USE

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



AChRα7 (C-20): sc-1447. Western blot analysis of AChRα7 expression in rat brain (**A**) and mouse brain (**B**) tissue extracts.

SELECT PRODUCT CITATIONS

1. Martin-Ruiz, C.M., et al. 1999. α4 but not α3 and α7 nicotinic acetylcholine receptor subunits are lost from the temporal cortex in Alzheimer's disease. J. Neurochem. 73: 1635-1640.
2. Chang, Q., et al. 2006. An acute effect of neuregulin 1 β to suppress α 7-containing nicotinic acetylcholine receptors in hippocampal interneurons. J. Neurosci. 26: 11295-11303.
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4. Dmitrieva, N.A., et al. 2007. Expression of α 7 nicotinic acetylcholine receptors by bipolar, amacrine, and ganglion cells of the rabbit retina. J. Histochem. Cytochem. 55: 461-476.
5. Sun, Y.P., et al. 2007. Effect of passive cigarette smoking on colonic α7-nicotinic acetylcholine receptors in TNBS-induced colitis in rats. Digestion 76: 181-187.
6. Novotny, A., et al. 2010. A pharmacological analysis of the cholinergic regulation of urokinase-type plasminogen activator secretion in the human colon cancer cell line, HT-29. Eur. J. Pharmacol. 646: 22-30.
7. Novotny, A., et al. 2011. Is acetylcholine a signaling molecule for human colon cancer progression? Scand. J. Gastroenterol. 46: 446-455.
8. Jenes, Á., et al. 2012. A possible role of the cholinergic and purinergic receptor interaction in the regulation of the rat urinary bladder function. J. Muscle Res. Cell Motil. 32: 421-431.