

# AChR $\alpha$ 7 (H-302): sc-5544

## 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 $\alpha$ 7, also known as NACHRA7, CHRNA7-2 or CHRNA7, is a 502 amino acid multi-pass membrane protein existing as a homopentamer and interacts with RIC-3, a nicotinic acetylcholine receptor (nAChR)-associated protein.

## CHROMOSOMAL LOCATION

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

## SOURCE

AChR $\alpha$ 7 (H-302) is a rabbit polyclonal antibody raised against amino acids 367-502 mapping at the C-terminus of AChR $\alpha$ 7 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.

## APPLICATIONS

AChR $\alpha$ 7 (H-302) is recommended for detection of the AChR $\alpha$ 7 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g 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).

AChR $\alpha$ 7 (H-302) is also recommended for detection of AChR $\alpha$ 7 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for AChR $\alpha$ 7 siRNA (h): sc-42532, AChR $\alpha$ 7 siRNA (m): sc-42533, AChR $\alpha$ 7 shRNA Plasmid (h): sc-42532-SH, AChR $\alpha$ 7 shRNA Plasmid (m): sc-42533-SH, AChR $\alpha$ 7 shRNA (h) Lentiviral Particles: sc-42532-V and AChR $\alpha$ 7 shRNA (m) Lentiviral Particles: sc-42533-V.

Molecular Weight of AChR $\alpha$ 7: 55 kDa.

Positive Controls: SK-N-MC cell lysate: sc-2237, mouse brain extract: sc-2253 or mouse cerebellum extract: sc-2403.

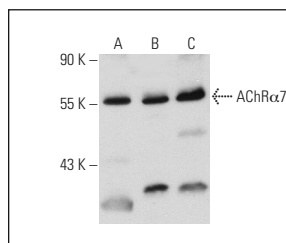
## STORAGE

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

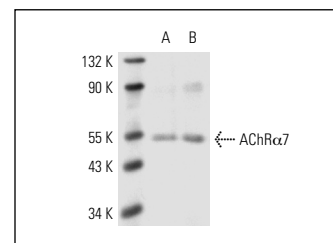
## RESEARCH USE

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

## DATA



AChR $\alpha$ 7 (H-302): sc-5544. Western blot analysis of AChR $\alpha$ 7 expression in HI9-7/IGF-IR (A), EOC 20 (B) and SK-N-MC (C) whole cell lysates.



AChR $\alpha$ 7 (H-302): sc-5544. Western blot analysis of AChR $\alpha$ 7 expression in mouse brain (A) and mouse cerebellum (B) tissue extracts.

## SELECT PRODUCT CITATIONS

1. Fabian-Fine, R., et al. 2001. Ultrastructural distribution of the  $\alpha$ 7 nicotinic acetylcholine receptor subunit in rat hippocampus. *J. Neurosci.* 21: 7993-8003.
2. Wang, Y., et al. 2001. Human bronchial epithelial and endothelial cells express  $\alpha$ 7 nicotinic acetylcholine receptors. *Mol. Pharmacol.* 60: 1201-1209.
3. Liu, Q., et al. 2009. A novel nicotinic acetylcholine receptor subtype in basal forebrain cholinergic neurons with high sensitivity to amyloid peptides. *J. Neurosci.* 29: 918-929.
4. Sun, X., et al. 2009. Nicotine stimulates PPAR $\beta$ / $\delta$  expression in human lung carcinoma cells through activation of PI3K/mTOR and suppression of AP-2 $\alpha$ . *Cancer Res.* 69: 6445-6453.
5. Maouche, K., et al. 2009.  $\alpha$ 7 nicotinic acetylcholine receptor regulates airway epithelium differentiation by controlling basal cell proliferation. *Am. J. Pathol.* 175: 1868-1882.
6. Kahlin, J., et al. 2010. Presence of nicotinic, purinergic and dopaminergic receptors and the TASK-1 K<sup>+</sup>-channel in the mouse carotid body. *Respir. Physiol. Neurobiol.* 172: 122-128.
7. Wang, H.Y., et al. 2010. S 24795 limits  $\beta$ -amyloid- $\alpha$ 7 nicotinic receptor interaction and reduces Alzheimer's disease-like pathologies. *Biol. Psychiatry* 67: 522-530.
8. Liu, Y., et al. 2012.  $\alpha$ 7 nicotinic acetylcholine receptor-mediated neuroprotection against dopaminergic neuron loss in an MPTP mouse model via inhibition of astrocyte activation. *J. Neuroinflammation* 9: 98.

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Try **AChR $\alpha$ 7 (319): sc-58607**, our highly recommended monoclonal alternative to AChR $\alpha$ 7 (H-302). Also, for AC, HRP, FITC, PE, Alexa Fluor<sup>®</sup> 488 and Alexa Fluor<sup>®</sup> 647 conjugates, see **AChR $\alpha$ 7 (319): sc-58607**.