

# AChR $\alpha$ 5 (D-19): sc-9345

## 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 $\alpha$ 5, also known as LNCR2 or CHRNA5 (cholinergic receptor, nicotinic,  $\alpha$  5), is a 468 amino acid multi-pass membrane protein belonging to the ligand-gated ionic channel family and is involved in the mediation of fast signal transmission at synapses.

## CHROMOSOMAL LOCATION

Genetic locus: CHRNA5 (human) mapping to 15q25.1; Chrna5 (mouse) mapping to 9 B.

## SOURCE

AChR $\alpha$ 5 (D-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of AChR $\alpha$ 5 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.

Blocking peptide available for competition studies, sc-9345 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

AChR $\alpha$ 5 (D-19) is recommended for detection of AChR $\alpha$ 5 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 $\alpha$ 5 (D-19) is also recommended for detection of AChR $\alpha$ 5 in additional species, including equine, canine, porcine and avian.

Suitable for use as control antibody for AChR $\alpha$ 5 siRNA (h): sc-42530, AChR $\alpha$ 5 siRNA (m): sc-42531, AChR $\alpha$ 5 shRNA Plasmid (h): sc-42530-SH, AChR $\alpha$ 5 shRNA Plasmid (m): sc-42531-SH, AChR $\alpha$ 5 shRNA (h) Lentiviral Particles: sc-42530-V and AChR $\alpha$ 5 shRNA (m) Lentiviral Particles: sc-42531-V.

Molecular Weight of AChR $\alpha$ 5: 53 kDa.

Positive Controls: mouse brain extract: sc-2253.

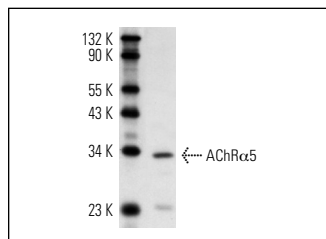
## RESEARCH USE

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

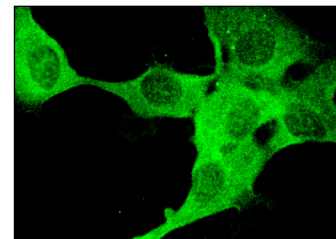
## STORAGE

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

## DATA



AChR $\alpha$ 5 (D-19): sc-9345. Western blot analysis of human recombinant AChR $\alpha$ 5.



AChR $\alpha$ 5 (D-19): sc-9345. Immunofluorescence staining of methanol-fixed BC<sub>3</sub>H1 cells showing membrane localization.

## SELECT PRODUCT CITATIONS

- Lang, P.M., et al. 2003. Characterization of neuronal nicotinic acetylcholine receptors in the membrane of unmyelinated human C-fiber axons by *in vitro* studies. *J. Neurophysiol.* 90: 3295-3303.
- Oshikawa, J., et al. 2003. Nicotinic acetylcholine receptor  $\alpha$  7 regulates cAMP signal within lipid rafts. *Am. J. Physiol., Cell Physiol.* 285: C567-C574.
- Di Angelantonio, S., et al. 2003. Molecular biology and electrophysiology of neuronal nicotinic receptors of rat chromaffin cells. *Eur. J. Neurosci.* 17: 2313-2322.
- Kurzen, H., et al. 2004. Phenotypical and molecular profiling of the extra-neuronal cholinergic system of the skin. *J. Invest. Dermatol.* 123: 937-949.
- Tournier, J.M., et al. 2006.  $\alpha$ 3 $\alpha$ 5 $\beta$ 2-nicotinic acetylcholine receptor contributes to the wound repair of the respiratory epithelium by modulating intracellular calcium in migrating cells. *Am. J. Pathol.* 168: 55-68.
- Yu, W.F., et al. 2007. Postnatal upregulation of  $\alpha$ 4 and  $\alpha$ 3 nicotinic receptor subunits in the brain of  $\alpha$ 7 nicotinic receptor-deficient mice. *Neuroscience* 146: 1618-1628.
- Gangitano, D., et al. 2009. Progesterone modulation of  $\alpha$ 5 nAChR subunits influences anxiety-related behavior during estrus cycle. *Genes Brain Behav.* 8: 398-406.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.

**MONOS**  
Satisfaction  
Guaranteed

Try **AChR $\alpha$ 5 (D-11): sc-376979** or **AChR $\alpha$ 5 (268): sc-58606**, our highly recommended monoclonal alternatives to AChR $\alpha$ 5 (D-19).