

# AChR $\alpha$ 3 (313): sc-58605

## 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 $\alpha$ 3, also known as LNCR2, PAOD2, NACHRA3 or CHRNA3, is a 505 amino acid multi-pass membrane protein that belongs to the ligand-gated ion channel receptor family and may play a role in neurotransmission.

## REFERENCES

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- Betz, H. 1990. Ligand-gated ion channels in the brain: the amino acid receptor superfamily. *Neuron* 5: 383-392.
- Baenziger, J.E., et al. 1992. Probing conformational changes in the nicotinic acetylcholine receptor by Fourier transform infrared difference spectroscopy. *Biophys. J.* 62: 64-66.
- Daw, N.W., et al. 1993. The role of NMDA receptors in information processing. *Annu. Rev. Neurosci.* 16: 207-222.
- Unwin, N. 1993. Neurotransmitter action: opening of ligand-gated ion channels. *Cell* 72: 31-41.
- Stevens, C.F. 1993. Quantal release of neurotransmitter and long-term potentiation. *Cell* 72: 55-63.
- Sargent, P.B. 1993. The diversity of neuronal nicotinic acetylcholine receptors. *Annu. Rev. Neurosci.* 16: 403-443.
- Ramirez-Latorre, J., et al. 1996. Functional contributions of  $\alpha$ 5 subunit to neuronal acetylcholine receptor channels. *Nature* 380: 347-351.

## CHROMOSOMAL LOCATION

Genetic locus: Chrna3 (mouse) mapping to 9 B.

## SOURCE

AChR $\alpha$ 3 (313) is a rat monoclonal antibody raised against bacterially expressed large cytoplasmic domain of AChR $\alpha$ 3 of chicken origin.

## STORAGE

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

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>2a</sub> in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

AChR $\alpha$ 3 (313) is available conjugated to agarose (sc-58605 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-58605 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-58605 PE), fluorescein (sc-58605 FITC), Alexa Fluor<sup>®</sup> 488 (sc-58605 AF488), Alexa Fluor<sup>®</sup> 546 (sc-58605 AF546), Alexa Fluor<sup>®</sup> 594 (sc-58605 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-58605 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-58605 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-58605 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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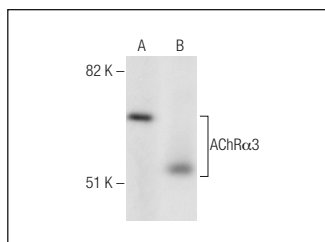
## APPLICATIONS

AChR $\alpha$ 3 (313) is recommended for detection of both native and denatured detergent solubilized nicotinic AChR $\alpha$ 3 of mouse, rat and avian 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 flow cytometry (1  $\mu$ g per 1 x 10<sup>6</sup> cells).

Molecular Weight of AChR $\alpha$ 3: 55 kDa.

Positive Controls: mouse brain extract: sc-2253, DT40 cell lysate: sc-3816 or rat brain extract: sc-2392.

## DATA



AChR $\alpha$ 3 (313): sc-58605. Western blot analysis of AChR $\alpha$ 3 expression in DT40 whole cell lysate (A) and rat brain tissue extract (B).

## SELECT PRODUCT CITATIONS

- Becerra-Amezcu, M.P., et al. 2020. Effect of *Pterois volitans* (lionfish) venom on cholinergic and dopaminergic systems. *Environ. Toxicol. Pharmacol.* 77: 103359.

## RESEARCH USE

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

## PROTOCOLS

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