

# AChR $\alpha$ (D6): sc-32253

## 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.

## REFERENCES

- Alkondon, M., et al. 1988. Acetylcholinesterase reactivators modify the functional properties of the nicotinic acetylcholine receptor ion channel. *J. Pharmacol. Exp. Ther.* 245: 543-556.
- 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.
- Sargent, P.B. 1993. The diversity of neuronal nicotinic acetylcholine receptors. *Annu. Rev. Neurosci.* 16: 403-443.
- 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.

## SOURCE

AChR $\alpha$  (D6) is a mouse monoclonal antibody raised against purified AChR $\alpha$  of human muscle.

## PRODUCT

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

AChR $\alpha$  (D6) is available conjugated to agarose (sc-32253 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-32253 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-32253 PE), fluorescein (sc-32253 FITC), Alexa Fluor<sup>®</sup> 488 (sc-32253 AF488), Alexa Fluor<sup>®</sup> 546 (sc-32253 AF546), Alexa Fluor<sup>®</sup> 594 (sc-32253 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-32253 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-32253 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-32253 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## APPLICATIONS

AChR $\alpha$  (D6) is recommended for detection of AChR $\alpha$  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 flow cytometry (1  $\mu$ g per 1 x 10<sup>6</sup> cells).

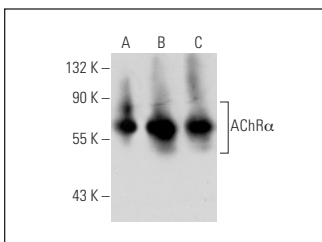
Molecular Weight of AChR $\alpha$ : 55 kDa.

Positive Controls: mouse heart extract: sc-2254, PC-12 cell lysate: sc-2250 or IMR-32 cell lysate: sc-2409.

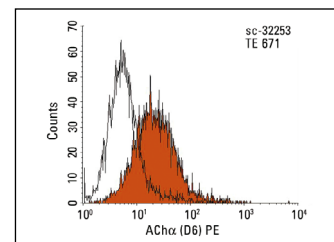
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## DATA



Western blot analysis of AChR complex expression in IMR-32 whole cell lysate (A) and in IMR-32 whole cell lysate immunoprecipitated with AChR $\alpha$  (G10): sc-32252 (B) and AChR $\alpha$  (D6): sc-32253 (C) and detected with AChR $\beta$ 1 (H-101): sc-11371.



AChR $\alpha$  (D6): sc-32253. Indirect FCM analysis of TE671 cells stained with AChR $\alpha$  (D6), followed by biotin-conjugated goat anti-mouse IgG<sub>2a</sub>: sc-2073, then Avidin-PE: sc-2876. Black line histogram represents the isotype control, normal mouse IgG<sub>2a</sub>: sc-3878.

## SELECT PRODUCT CITATIONS

- Takemura, Y., et al. 2013. Cholinergic regulation of epithelial sodium channels in rat alveolar type 2 epithelial cells. *Am. J. Physiol. Lung Cell. Mol. Physiol.* 304: L428-L437.

## 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.

## PROTOCOLS

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