

# AChR $\alpha$ 5 (D-11): sc-376979

## 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.

## SOURCE

AChR $\alpha$ 5 (D-11) is a mouse monoclonal antibody raised against amino acids 370-419 mapping within a cytoplasmic domain of AChR $\alpha$ 5 of human origin.

## PRODUCT

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

AChR $\alpha$ 5 (D-11) is available conjugated to agarose (sc-376979 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-376979 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376979 PE), fluorescein (sc-376979 FITC), Alexa Fluor® 488 (sc-376979 AF488), Alexa Fluor® 546 (sc-376979 AF546), Alexa Fluor® 594 (sc-376979 AF594) or Alexa Fluor® 647 (sc-376979 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376979 AF680) or Alexa Fluor® 790 (sc-376979 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## APPLICATIONS

AChR $\alpha$ 5 (D-11) is recommended for detection of AChR $\alpha$ 5 of human origin by Western Blotting (starting dilution 1:100, 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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

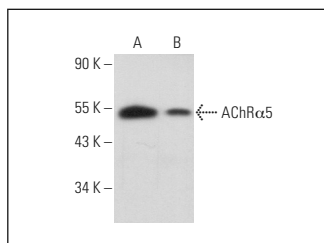
Molecular Weight of AChR $\alpha$ 5: 53 kDa.

Positive Controls: T-47D cell lysate: sc-2293 or IMR-32 cell lysate: sc-2409.

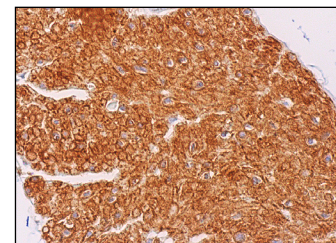
## RECOMMENDED SUPPORT REAGENTS

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™ Molecular Weight Standards: sc-2035, UltraCruz® 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® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgG $\kappa$  BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

## DATA



AChR $\alpha$ 5 (D-11): sc-376979. Western blot analysis of AChR $\alpha$ 5 expression in T-47D (A) and IMR-32 (B) whole cell lysates.



AChR $\alpha$ 5 (D-11): sc-376979. Immunoperoxidase staining of formalin fixed, paraffin-embedded human smooth muscle tissue showing membrane and cytoplasmic staining of smooth muscle cells.

## SELECT PRODUCT CITATIONS

- Paulo, J.A., et al. 2015. Global analysis of protein expression and phosphorylation levels in nicotine-treated pancreatic stellate cells. *J. Proteome Res.* 14: 4246-4256.
- Qian, J., et al. 2016. Nicotine-induced effects on nicotinic acetylcholine receptors (nAChRs), Ca<sup>2+</sup> and brain-derived neurotrophic factor (BDNF) in STC-1 cells. *PLoS ONE* 11: e0166565.
- Qian, J., et al. 2018. Nicotinic acetylcholine receptor (CHRN) expression and function in cultured human adult fungiform (HBO) taste cells. *PLoS ONE* 13: e0194089.
- Harmych, S.J., et al. 2020. Nicotine inhibits MAPK signaling and spheroid invasion in ovarian cancer cells. *Exp. Cell Res.* 394: 112167.

## 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.