SANTA CRUZ BIOTECHNOLOGY, INC.

AChRα7 (319): sc-58607

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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. AChRα7, 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.

REFERENCES

1. 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.
2. Betz, H. 1990. Ligand-gated ion channels in the brain: the amino acid receptor superfamily. Neuron 5: 383-392.
3. 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.

CHROMOSOMAL LOCATION

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

SOURCE

AChRα7 (319) is a rat monoclonal antibody raised against bacterially expressed large cytoplasmic domain of AChRα7 of chicken origin.

PRODUCT

Each vial contains 200 µg IgG_1 in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

AChRα7 (319) is available conjugated to agarose (sc-58607 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-58607 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-58607 PE), fluorescein (sc-58607 FITC), Alexa Fluor® 488 (sc-58607 AF488), Alexa Fluor® 546 (sc-58607 AF546), Alexa Fluor® 594 (sc-58607 AF594) or Alexa Fluor® 647 (sc-58607 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-58607 AF680) or Alexa Fluor® 790 (sc-58607 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

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

APPLICATIONS

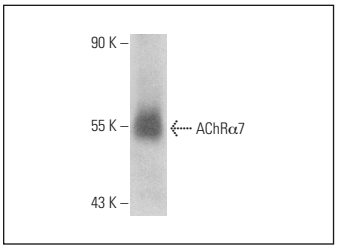
AChRα7 (319) is recommended for detection of both native and denatured nicotinic AChRα7 of mouse, rat, human and avian origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (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 flow cytometry (1 µg per 1 x 10^6 cells); non cross-reactive with AChRα8.

Suitable for use as control antibody for AChRα7 siRNA (h): sc-42532, AChRα7 siRNA (m): sc-42533, AChRα7 siRNA (r): sc-270402, AChRα7 shRNA Plasmid (h): sc-42532-SH, AChRα7 shRNA Plasmid (m): sc-42533-SH, AChRα7 shRNA Plasmid (r): sc-270402-SH, AChRα7 shRNA (h) Lentiviral Particles: sc-42532-V, AChRα7 shRNA (m) Lentiviral Particles: sc-42533-V and AChRα7 shRNA (r) Lentiviral Particles: sc-270402-V.

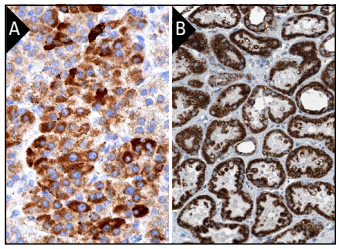
Molecular Weight of AChRα7: 55 kDa.

Positive Controls: rat small intestine extract: sc-364811, rat brain extract: sc-2392 or SK-N-MC cell lysate: sc-2237.

DATA



AChRα7 (319): sc-58607. Western blot analysis of AChRα7 expression in rat small intestine tissue extract.



AChRα7 (319): sc-58607. Immunoperoxidase staining of formalin fixed, paraffin-embedded human adrenal gland tissue showing cytoplasmic staining of subset of glandular cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney showing cytoplasmic staining of cells in tubules at high magnification. Kindly provided by The Swedish Human Protein Atlas (HPA) program (**B**).

SELECT PRODUCT CITATIONS

1. Aizawa, K., et al. 2013. Development of ferret as a human lung cancer model by injecting 4-(N-methyl-N-nitrosamino)-1-(3-pyridyl)-1-butanone (NNK). Lung Cancer 82: 390-396.
2. Becerra-Amezcua, M.P., et al. 2020. Effect of *Pterois volitans* (lionfish) venom on cholinergic and dopaminergic systems. Environ. Toxicol. Pharmacol. 77: 103359.
3. Deng, J., et al. 2021. Solitary chemosensory cells are innervated by trigeminal nerve endings and autoregulated by cholinergic receptors. Int. Forum Allergy Rhinol. 11: 877-884.

STORAGE

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