SANTA CRUZ BIOTECHNOLOGY, INC.

AChRα1/3/5 (35): sc-58604



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 α 1, AChR α 3 and AChR α 5 belong to the family of ligand-gated ion channel receptors and may play a role in the mediation of fast signal transmission at synapses. Mutations in the gene encoding AChR α 3 and AChR α 5 are the cause of susceptibility to lung cancer type 2 and defects in the AChRa1 gene results in lethal type multiple pterygium syndrome.

REFERENCES

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

Genetic locus: CHRNA1 (human) mapping to 2q31.1, CHRNA3/ CHRNA5 (human) mapping to 15q25.1; Chrna1 (mouse) mapping to 2 C3, Chrna3/Chrna5 (mouse) mapping to 9 B.

SOURCE

AChR α 1/3/5 (35) is a rat monoclonal antibody raised against full length denatured AChR α 1/3/5 of *Electophorus electricus* origin.

PRODUCT

Each vial contains 200 $\mu g~lgG_1$ in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

AChR α 1/3/5 (35) is recommended for detection of native nicotinic AChR α 1, AChR α 3 and AChR α 5 of mouse, rat, human, *Electophorus electricus* and canine origin by 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); may cross react with human AChR β 3.

Molecular Weight of AChRa1/3/5: 51/54/57 kDa.

SELECT PRODUCT CITATIONS

 Russell, A.J., et al. 2012. Activation of fast skeletal muscle troponin as a potential therapeutic approach for treating neuromuscular diseases. Nat. Med. 18: 452-455.

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 for detailed protocols and support products.



See AChR α 1 (153): sc-65829 for AChR α 1 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor[®] 488, 546, 594, 647, 680 and 790.