SANTA CRUZ BIOTECHNOLOGY, INC.

AChRε (B-11): sc-376747

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. AChRε, also known as CMS1D, CMS1E, CMS2A, FCCMS, SCCMS or CHRNE, is a 493 amino acid multi-pass membrane protein associated with congenital myasthenic syndrome slow-channel type (SCCMS), congenital myasthenic syndrome fast-channel type (FCCMS) and congenital myasthenic syndrome with acetylcholine receptor deficiency.

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.

CHROMOSOMAL LOCATION

Genetic locus: CHRNE (human) mapping to 17p13.2; Chrne (mouse) mapping to 11 B3.

SOURCE

AChRε (B-11) is a mouse monoclonal antibody raised against amino acids 334-441 mapping at the C-terminus of AChRε of human origin.

PRODUCT

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

AChRε (B-11) is available conjugated to agarose (sc-376747 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-376747 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376747 PE), fluorescein (sc-376747 FITC), Alexa Fluor® 488 (sc-376747 AF488), Alexa Fluor® 546 (sc-376747 AF546), Alexa Fluor® 594 (sc-376747 AF594) or Alexa Fluor® 647 (sc-376747 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376747 AF680) or Alexa Fluor® 790 (sc-376747 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

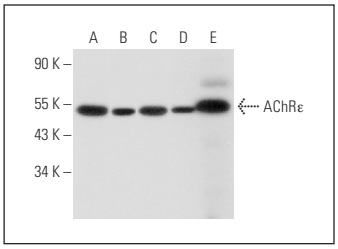
AChRε (B-11) is recommended for detection of AChRε of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for AChRε siRNA (h): sc-42542, AChRε siRNA (m): sc-42543, AChRε shRNA Plasmid (h): sc-42542-SH, AChRε shRNA Plasmid (m): sc-42543-SH, AChRε shRNA (h) Lentiviral Particles: sc-42542-V and AChRε shRNA (m) Lentiviral Particles: sc-42543-V.

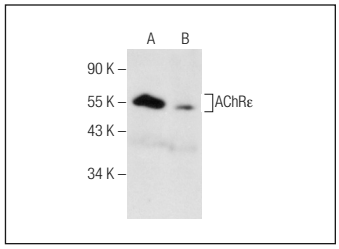
Molecular Weight of glycosylated AChRε: 44-60 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, BC_3H1 cell lysate: sc-2299 or HeLa whole cell lysate: sc-2200.

DATA



AChRε (B-11): sc-376747. Western blot analysis of AChRε expression in NIH/3T3 (**A**), SH-SY5Y (**B**), Hep G2 (**C**) and HeLa (**D**) whole cell lysates and human skeletal muscle tissue extract (**E**).



AChRε (B-11): sc-376747. Western blot analysis of AChRε expression in BC_3H1 (**A**) and SH-SY5Y (**B**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Makino, Y., et al. 2021. Expression and possible role of nicotinic acetylcholine receptor ε subunit (AChRε) in mouse sperm. Biology 10: 46.
2. Cai, Y., et al. 2021. A stable cell line expressing clustered AChR: a novel cell-based assay for anti-AChR antibody detection in myasthenia gravis. Front. Immunol. 12: 666046.
3. Leite, A.P.S., et al. 2022. Acetylcholine receptors of the neuromuscular junctions present normal distribution after peripheral nerve injury and repair through nerve guidance associated with fibrin biopolymer. Injury. E-published.

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.