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\(^\alpha\)7, 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


CHROMOSOMAL LOCATION

Genetic locus: CHRN\(^\alpha\)7 (human) mapping to 15q13.3; \(\text{Chrn}\)a7 (mouse) mapping to 7 C.

SOURCE

AChR\(^\alpha\)7 (319) is a rat monoclonal antibody raised against bacterially expressed large cytoplasmic domain of AChR\(^\alpha\)7 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.

AChR\(^\alpha\)7 (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\(^\text{®}\) 488 (sc-58607 AF488), Alexa Fluor\(^\text{®}\) 546 (sc-58607 AF546), Alexa Fluor\(^\text{®}\) 594 (sc-58607 AF594) or Alexa Fluor\(^\text{®}\) 647 (sc-58607 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor\(^\text{®}\) 680 (sc-58607 AF680) or Alexa Fluor\(^\text{®}\) 790 (sc-58607 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

AChR\(^\alpha\)7 (319) is recommended for detection of both native and denatured nicotinic AChR\(^\alpha\)7 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 AChR\(^\alpha\)8.

Suitable for use as control antibody for AChR\(^\alpha\)7 siRNA (h): sc-42532, AChR\(^\alpha\)7 siRNA (m): sc-42533, AChR\(^\alpha\)7 siRNA (r): sc-270402; AChR\(^\alpha\)7 shRNA Plasmid (h): sc-42532-SH, AChR\(^\alpha\)7 shRNA Plasmid (m): sc-42533-Sh, AChR\(^\alpha\)7 shRNA Plasmid (r): sc-270402-SH, AChR\(^\alpha\)7 shRNA Plasmid (h): sc-42532-Sh, AChR\(^\alpha\)7 shRNA Plasmid (m): sc-42533-Sh, AChR\(^\alpha\)7 shRNA Plasmid (r): sc-270402-Sh, AChR\(^\alpha\)7 shRNA Plasmid (h): sc-42532-Sh, AChR\(^\alpha\)7 shRNA Plasmid (m): sc-42533-Sh, AChR\(^\alpha\)7 shRNA Plasmid (r): sc-270402-Sh. Lentiviral Particles: sc-42532-V, AChR\(^\alpha\)7 shRNA (m) Lentiviral Particles: sc-42533-V and AChR\(^\alpha\)7 shRNA (r) Lentiviral Particles: sc-270402-V.

Molecular Weight of AChR\(^\alpha\)7: 55 kDa.


DATA

AChR\(^\alpha\)7 (319): sc-58607. Western blot analysis of AChR\(^\alpha\)7 expression in rat small intestine tissue extract.

SELECT PRODUCT CITATIONS


RESEARCH USE

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