

rapsyn (C-16): sc-13683

BACKGROUND

The RAPSIN gene locus is located on chromosome 11p11.2 and encodes a peripheral membrane protein. Rapsyn (receptor-associated protein of the synapse) is expressed in the postsynaptic membrane of skeletal muscle. Rapsyn is required for the clustering of nicotinic acetylcholine receptors (nAChR). Rapsyn self-associates through at least two of its seven tetra-tri-copeptide repeats (TPRs). Rapsyn interacts with the large intracellular domain of the nAChR alpha subunit through the hydrophobic surface of the coiled-coil domain. Rapsyn modifies trafficking of AChR within the cell. Expression is essential for agrin-induced AChR clustering. Overexpression inhibits agrin-induced AChR clustering pathway. Absence of rapsyn causes deficit in the formation of postsynaptic specializations at neuromuscular synapse, which increases axonal branching and motoneuron survival. Rapsyn plays a role in selective targeting of newly synthesized intracellular AChR to postsynaptic membrane.

REFERENCES

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2. Maimone, M.M. and Enigk, R.E. 1999. The intracellular domain of the nicotinic acetylcholine receptor a subunit mediates its coclustering with rapsyn. *Mol. Cell Neurosci.* 14: 340-354.
3. Han, H., Noakes, P.G. and Phillips, W.D. 1999. Over-expression of rapsyn inhibits agrin induced acetylcholine receptor clustering in muscle cells. *J. Neurocytol.* 28: 763-775.
4. Ramarao, M.K., Bianchetta, M.J., Lanken, J. and Cohen, J.B. 2000. Role of rapsyn tetratricopeptide repeat and coiled-coil domains in self-association and nicotinic acetylcholine receptor clustering. *J. Biol.* 276: 7475-7483 .
5. Han, H., Yang, S.H. and Phillips, W.D. 2000. Overexpression of rapsyn modifies the intracellular trafficking of acetylcholine receptors. *J. Neurosci. Res.* 60: 155-163.
6. Banks, G.B., Chau, T.N., Bartlett, S.E. and Noakes, P.G. 2001. Promotion of motoneuron survival and branching in rapsyn-deficient mice. *J. Comp. Neurol.* 429: 156-165.

CHROMOSOMAL LOCATION

Genetic locus: RAPSIN (human) mapping to 11p11.2; Rapsn (mouse) mapping to 2 E1.

SOURCE

rapsyn (C-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of rapsyn of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-13683 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

rapsyn (C-16) is recommended for detection of rapsyn of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

rapsyn (C-16) is also recommended for detection of rapsyn in additional species, including canine, bovine, porcine and avian.

Suitable for use as control antibody for rapsyn siRNA (h): sc-42206, rapsyn siRNA (m): sc-42207, rapsyn shRNA Plasmid (h): sc-42206-SH, rapsyn shRNA Plasmid (m): sc-42207-SH, rapsyn shRNA (h) Lentiviral Particles: sc-42206-V and rapsyn shRNA (m) Lentiviral Particles: sc-42207-V.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

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 or our catalog for detailed protocols and support products.