SANTA CRUZ BIOTECHNOLOGY, INC.

rapsyn (Q-22): sc-133942

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The Power to Question

BACKGROUND

The RAPSN 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-tricopeptide repeats (TPRs). Rapsyn interacts with the large intracellular domain of the nAChR a 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 post-synaptic specializations at neuromuscular synapse, which increases axonal branching and motonueron survival. Rapsyn plays a role in selective targeting of newly synthesized intracellular AChR to postsynaptic membrane.

REFERENCES

1. Buckel, A., Beeson, D., James, M. and Vincent, A. 1996. Cloning of cDNA encoding human rapsyn and mapping of the RAPSN gene locus to chromosome 11p11.2-11.1. Genomics 35: 613-616.
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. Overexpression 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 acetlycholine 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: RAPSN (human) mapping to 11p11.2; Rapsn (mouse) mapping to 2 E1.

SOURCE

rapsyn (Q-22) is an affinity purified rabbit polyclonal antibody raised against synthetic rapsyn peptide of human origin.

PRODUCT

Each vial contains 50 µg IgG in 500 µl PBS with < 0.1% sodium azide, 0.1% gelatin and < 0.02% sucrose.

RESEARCH USE

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

APPLICATIONS

rapsyn (Q-22) is recommended for detection of rapsyn of mouse, rat, human and canine 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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.

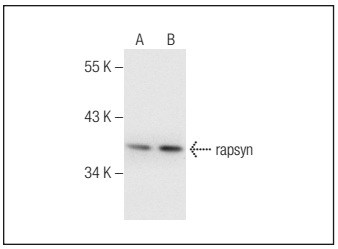
Molecular Weight of rapsyn: 43 kDa.

Positive Controls: U-698-M whole cell lysate: sc-364799 or Jurkat whole cell lysate: sc-2204.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



rapsyn (Q-22): sc-133942. Western blot analysis of rapsyn expression in U-698-M (**A**) and Jurkat (**B**) whole cell lysates.

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.