SANTA CRUZ BIOTECHNOLOGY, INC.

Syd-2 (cL-19): sc-15655

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The Power to Question

BACKGROUND

Specialized subcellular structures occur in both pre- and postsynaptic cells. Most presynaptic termini contain electron-dense membrane structures called active zones, which function in vesicle docking and release. The *C. elegans* synapse-defective gene Syd-2 encodes a protein, which is a member of the liprin (for LAR-interacting protein) family that interacts with LAR-type receptor proteins with tyrosine phosphatase activity (RPTP). Syd-2 protein is localized at the presynaptic termini independently of the presence of vesicles. Syd-2 acts as an intracellular anchor for RPTP signalling at synaptic junctions to regulate the differentiation of presynaptic termini, in particular, the formation of the active zone. A mutation in the *C. elegans* Syd-2 causes a diffused localization of several presynaptic proteins. The active zones of Syd-2 mutants are lengthened; however, the total number of vesicles in each synapse and the number of vesicles at the prominant active zones are similar to those in wild type Syd-2. In addition, the Syd-2 mutants have partial impairment of synaptic transmission.

REFERENCES

1. Zhen, M. and Jin, Y. 1999. The liprin protein Syd-2 regulates differentiation of presynaptic termini in *C. elegans*. Nature 401: 371-375.
2. Serra-Pages, C., Medley, Q.G., Tang, M., Hart, A. and Streuli, M. 1998. Liprins, a family of LAR transmembrane protein-tyrosine phosphatase-interacting proteins. J. Biol. Chem. 273: 15611-15620.
3. Serra-Pages, C., Kedersha, N.L., Fazikas, L., Medley, Q., Debant, A. and Streuli, M. 1995. The LAR transmembrane protein tyrosine phosphatase and a coiled-coil LAR-interacting protein co-localize at focal adhesions. EMBO J. 14: 2827-2838.
4. Pulido, R., Serra-Pages, C., Tang, M. and Streuli, M. 1995 .The LAR/PTPd/PTPs subfamily of transmembrane protein-tyrosine-phosphatase: multiple human LAR, PTPd, and PTPs isoforms are expressed in a tissue-specific manner and associate with the LAR-interacting protein LIP.1. Proc. Natl. Acad. Sci. USA 92: 11686-11690.
5. Nonet, M.L. 1999. Visualization of synaptic specialization in live *C. elegans* with synaptic vesicle protein-GFP fusions. J. Neurosci. Methods. 89: 33-40.
6. Hallam, S. and Jin, Y. 1998. lin-14 regulates the timing of synaptic remodeling in *Caenorhabditis elegans*. Nature 395: 78-80.

SOURCE

Syd-2 (cL-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of Syd-2 of *Caenorhabditis elegans* 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-15655 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Syd-2 (cL-19) is recommended for detection of Syd-2 of *Caenorhabditis elegans* 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).

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.