SANTA CRUZ BIOTECHNOLOGY, INC.

Synaptoporin (F-1): sc-398921

BACKGROUND

Synaptic vesicle recycling involves numerous proteins that contribute to the formation and trafficking of the SNARE complexes throughout the cell. Synaptoporin, also designated synaptophysin 2, is an integral membrane protein of small synaptic vesicles that belongs to the synaptophysin/synaptobrevin family. Synaptoporin is highly homologus to synaptophysin 1 and both Synaptoporin and synaptophysin 1 contain four transmembrane domains and a short cytoplasmic tail. The Synaptoporin protein also contains one MARVEL domain, a membrane-associating domain found in lipid-associating proteins, and displays calcium-binding activity which may be localized to its cytoplasmic tail. Syntaphilin, synaptophysin and Synaptoporin regulate the formation of the vesicles by competing with components of the SNARE complexes to respectively inhibit either the assembly or the secretion of the synaptic vesicles.

REFERENCES

1. Leube, R.E., et al. 1988. Synaptophysin: molecular organization and mRNA expression as determined from cloned cDNA. EMBO J. 6: 3261-3268.
2. Singec, I., et al. 2002. Synaptic vesicle protein Synaptoporin is differently expressed by subpopulations of mouse hippocampal neurons. J. Comp. Neurol. 452: 139-153.
3. Jinno, S. and Kosaka, T. 2003. Heterogeneous expression of the cholecystokinin-like immunoreactivity in the mouse hippocampus, with special reference to the dorsoventral difference. Neuroscience 122: 869-884.
4. Dai, J., et al. 2003. Cloning and sequence analysis of the human cDNA encoding the Synaptoporin δ, a highly conservative synaptic vesicle protein. Mol. Biol. Rep. 30: 185-191.
5. Voigt, C., et al. 2004. Differential expression pattern and steroid hormone sensitivity of SNAP-25 and Synaptoporin mRNA in the telencephalic song control nucleus HVC of the zebra finch. J. Comp. Neurol. 475: 83-94.

CHROMOSOMAL LOCATION

Genetic locus: SYNPR (human) mapping to 3p14.2; Synpr (mouse) mapping to 14 A1.

SOURCE

Synaptoporin (F-1) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 234-252 near the C-terminus of Synaptoporin 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.

Blocking peptide available for competition studies, sc-398921 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

RESEARCH USE

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

APPLICATIONS

Synaptoporin (F-1) is recommended for detection of Synaptoporin 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 Synaptoporin siRNA (h): sc-61626, Synaptoporin siRNA (m): sc-61627, Synaptoporin shRNA Plasmid (h): sc-61626-SH, Synaptoporin shRNA Plasmid (m): sc-61627-SH, Synaptoporin shRNA (h) Lentiviral Particles: sc-61626-V and Synaptoporin shRNA (m) Lentiviral Particles: sc-61627-V.

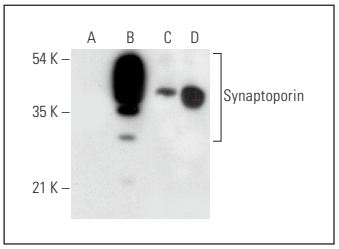
Molecular Weight of Synaptoporin: 37 kDa.

Positive Controls: Synaptoporin (h2): 293T Lysate: sc-178007, mouse eye extract: sc-364241 or mouse brain extract: sc-2253.

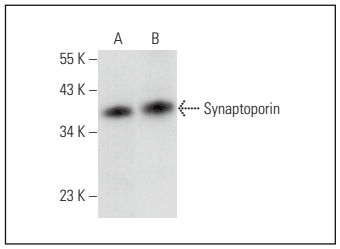
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



Synaptoporin (F-1): sc-398921. Western blot analysis of Synaptoporin expression in non-transfected: sc-117752 (**A**) and human Synaptoporin transfected: sc-178007 (**B**) 293T whole cell lysates and rat brain (**C**) and mouse brain (**D**) tissue extracts.



Synaptoporin (F-1): sc-398921. Western blot analysis of Synaptoporin expression in human brain (**A**) and mouse eye (**B**) tissue extracts.

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 for detailed protocols and support products.