SANTA CRUZ BIOTECHNOLOGY, INC.

Synapsin Ia/b (N-19): sc-7379

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Synapsins are synaptic vesicle-associated phosphoproteins that regulate synaptic vesicle exocytosis and may be involved in synaptogenesis. Evidence suggests that Synapsin I, Synapsin II and Synapsin IIIa are ATP-binding proteins that are regulated by Ca^{2+} and calmodulin binding. Ca^{2+} has been shown to stimulate ATP binding to Synapsin I, to have no effect on Synapsin II and to inhibit Synapsin III. Synapsin I and Synapsin II both undergo alternative splicing to produce two forms of each protein, Synapsin Ia and Ib and Synapsin IIa and IIb, respectively. Synapsin III gives rise to at least three isoforms: Synapsin IIIa, IIIb and IIIc. Synapsin III plays unique roles both in early axon outgrowth and in the regulation of synaptic vesicle trafficking. In cultured mouse hippocampal neurons, Synapsin III is expressed early during development, with levels peaking seven days after plating and declining thereafter. Synapsin III is highly concentrated in growth cones.

REFERENCES

1. Melloni, R.H., Jr. and DeGennaro, L.J. 1994. Temporal onset of Synapsin I gene expression coincides with neuronal differentiation during the development of the nervous system. J. Comp. Neurol. 342: 449-462.
2. Nicol, S., et al. 1997. Ca^{2+}-dependent interaction with calmodulin is conserved in the synapsin family: identification of a high-affinity site. Biochemistry 36: 11487-11495.
3. Hosaka, M. and Sudhof, T.C. 1998. Synapsins I and II are ATP-binding proteins with differential Ca^{2+} regulation. J. Biol. Chem. 273: 1425-1429.

SOURCE

Synapsin Ia/b (N-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of Synapsin Ia/b 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-7379 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Synapsin Ia/b (N-19) is recommended for detection of a broad range of synapsin family memebers of mouse, rat and human 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Synapsin Ia/b (N-19) is also recommended for detection of a broad range of synapsin family memebers in additional species, including bovine and porcine.

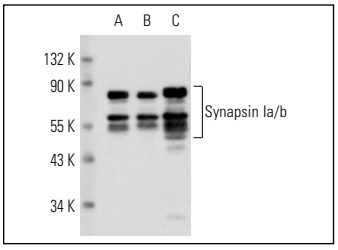
Molecular Weight of Synapsin Ia/b: 80/86 kDa.

Positive Controls: Synapsin Ia/b (m): 293T Lysate: sc-123862, rat cerebellum extract: sc-2398 or rat brain extract: sc-2392.

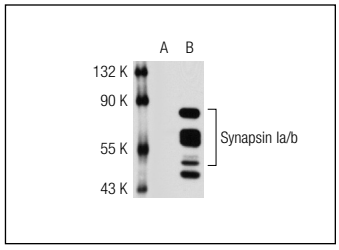
STORAGE

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

DATA



Synapsin Ia/b (N-19): sc-7379. Western blot analysis of Synapsin Ia/b expression in rat cerebellum (**A**), rat brain (**B**) and mouse brain (**C**) tissue extracts.



Synapsin Ia/b (N-19): sc-7379. Western blot analysis of Synapsin Ia/b expression in non-transfected: sc-117752 (**A**) and mouse Synapsin Ia/b transfected: sc-123862 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Nowicka, D., et al. 2003. A surface antigen delineating a subset of neurons in the primary somatosensory cortex of the mouse. Acta Neurobiol. Exp. 63: 185-195.
2. Silver, R.B., et al. 2004. Mast cells: a unique source of Renin. Proc. Natl. Acad. Sci. USA 101: 13607-13612.
3. Meng, X., et al. 2006. Effects of overexpression of Sim2 on spatial memory and expression of synapsin I in rat hippocampus. Cell Biol. Int. 30: 841-847.
4. Sheinin, A., et al. 2008. Endocannabinoid- and mGluR5-dependent short-term synaptic depression in an isolated neuron/bouton preparation from the hippocampal CA1 region. J. Neurophysiol. 100: 1041-1052.
5. Zhu, C., et al. 2010. Isoflurane anesthesia induced persistent, progressive memory impairment, caused a loss of neural stem cells, and reduced neurogenesis in young, but not adult, rodents. J. Cereb. Blood Flow Metab. 30: 1017-1030.

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.