

Synapsin Ia/b (m): 293T Lysate: sc-123862

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 IIIa and IIIb, 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. Sudhof, T.C., et al. 1989. Synapsins: mosaics of shared and individual domains in a family of synaptic vesicle phosphoproteins. *Science* 245: 1474-1480.
2. Sudhof, T.C. 1990. The structure of the human Synapsin I gene and protein. *J. Biol. Chem.* 265: 7849-7852.
3. 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.
4. 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.
5. 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.

CHROMOSOMAL LOCATION

Genetic locus: Syn1 (mouse) mapping to X A1.3.

PRODUCT

Synapsin Ia/b (m): 293T Lysate represents a lysate of mouse Synapsin Ia/b transfected 293T cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

APPLICATIONS

Synapsin Ia/b (m): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive Synapsin Ia/b antibodies. Recommended use: 10-20 μ l per lane.

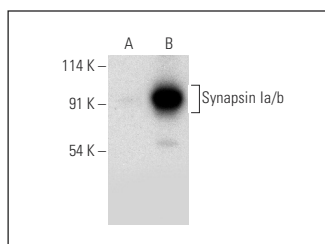
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

Synapsin Ia/b (B-12): sc-398846 is recommended as a positive control antibody for Western Blot analysis of enhanced mouse Synapsin Ia/b expression in Synapsin Ia/b transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

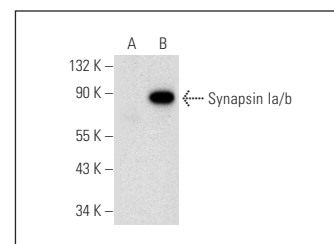
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:
1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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.

DATA



Synapsin Ia/b (A-1): sc-398849. 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.



Synapsin Ia/b (B-12): sc-398846. 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.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. 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 for detailed protocols and support products.