

Synapsin Ia/b (A-15): sc-55774

BACKGROUND

Synapsins are synaptic vesicle-associated phospho-proteins 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 one isoform, Synapsin IIIa. 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

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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.
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7. Kao, H.T., et al. 1998. A third member of the synapsin gene family. *Proc. Natl. Acad. Sci. USA* 95: 4667-4672.

CHROMOSOMAL LOCATION

Genetic locus: SYN1 (human) mapping to Xp11.23; Syn1 (mouse) mapping to X A1.3.

SOURCE

Synapsin Ia/b (A-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of Synapsin Ia of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-55774 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Synapsin Ia/b (A-15) is recommended for detection of Synapsin Ia and Synapsin Ib of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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 (A-15) is also recommended for detection of Synapsin Ia and Synapsin Ib in additional species, including porcine.

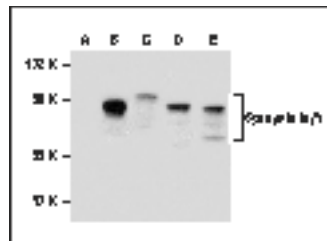
Suitable for use as control antibody for Synapsin Ia/b siRNA (h): sc-37012, Synapsin Ia/b siRNA (m): sc-37013, Synapsin Ia/b shRNA Plasmid (h): sc-37012-SH, Synapsin Ia/b shRNA Plasmid (m): sc-37013-SH, Synapsin Ia/b shRNA (h) Lentiviral Particles: sc-37012-V and Synapsin Ia/b shRNA (m) Lentiviral Particles: sc-37013-V.

Molecular Weight of Synapsin Ia: 80 kDa.

Molecular Weight of Synapsin Ib: 86 kDa.

Positive Controls: Synapsin Ia/b (m): 293T Lysate: sc-123862, mouse brain extract: sc-2253 or rat cerebellum extract: sc-2398.

DATA



Synapsin Ia/b (A-15) sc-55774. Western blot analysis of Synapsin Ia/b expression in cell lines: (A) HEK293T, (B) NIH3T3, (C) COS cells transfected with pcDNA3-Synapsin Ia/b, (D) 293T whole cell lysate and (E) mouse brain (10) and cerebellum (6).

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.

MONOS
Satisfaction
Guaranteed

Try **Synapsin Ia/b (A-8): sc-376623** or **Synapsin Ia/b (A-1): sc-398849**, our highly recommended monoclonal alternatives to Synapsin Ia/b (A-15).