

Synapsin Ia/b (H-170): sc-20780

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.

CHROMOSOMAL LOCATION

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

SOURCE

Synapsin Ia/b (H-170) is a rabbit polyclonal antibody raised against amino acids 491-660 of Synapsin Ia/b 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.

STORAGE

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

APPLICATIONS

Synapsin Ia/b (H-170) is recommended for detection of Synapsin Ia/b 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 (H-170) is also recommended for detection of Synapsin Ia/b in additional species, including canine and bovine.

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.

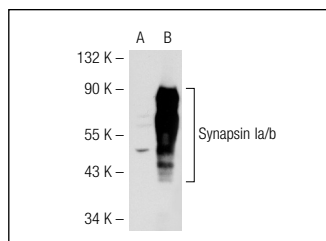
Molecular Weight of Synapsin Ib: 86 kDa.

Positive Controls: Synapsin Ia/b (m): 293T Lysate: sc-123862, mouse brain extract: sc-2253 or rat brain extract: sc-2392.

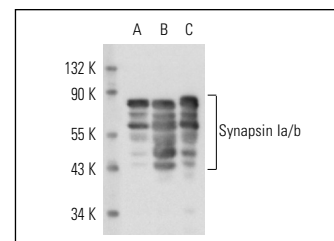
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker[™] compatible goat anti-rabbit IgG-HRP: sc-2030 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz[™] Mounting Medium: sc-24941.

DATA



Synapsin Ia/b (H-170): sc-20780. 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 (H-170): sc-20780. Western blot analysis of Synapsin Ia/b expression in rat cerebellum (A), rat brain (B) and mouse brain (C) tissue extracts.

SELECT PRODUCT CITATIONS

- Vinade, L., et al. 2003. Affinity purification of PSD-95-containing post-synaptic complexes. *J. Neurochem.* 87: 1255-1261.
- Su, L., et al. 2009. Neural stem cell differentiation is mediated by Integrin $\beta 4$ *in vitro*. *Int. J. Biochem. Cell Biol.* 41: 916-924.
- Ting, A.K., et al. 2011. Neuregulin 1 promotes excitatory synapse development and function in GABAergic interneurons. *J. Neurosci.* 31: 15-25.
- Marrocco, J., et al. 2012. Anxiety-like behavior of prenatally stressed rats is associated with a selective reduction of glutamate release in the ventral hippocampus. *J. Neurosci.* 32: 17143-17154.

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.

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 (H-170).