

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

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.

CHROMOSOMAL LOCATION

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

SOURCE

Synapsin Ia/b (A-1) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 662-686 at the C-terminus of Synapsin Ia/b of human origin.

PRODUCT

Each vial contains 200 μ g IgM 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-398849 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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 (A-1) is recommended for detection of Synapsin Ia/b of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

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.

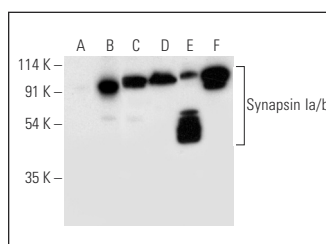
Molecular Weight of Synapsin Ia/Ib: 80/86 kDa.

Positive Controls: Synapsin Ia/b (m): 293T Lysate: sc-123862, U-87 MG cell lysate: sc-2411 or mouse cerebellum extract: sc-2403.

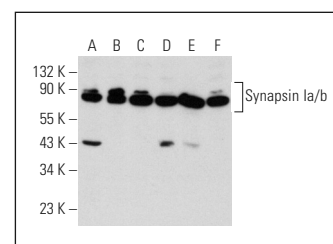
RECOMMENDED SUPPORT REAGENTS

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. 2) Immunoprecipitation: use Protein L-Agarose: sc-2336 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ 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



Synapsin Ia/b (A-1): sc-398849. Western blot analysis of Synapsin Ia/b expression in non-transfected 293T: sc-117752 (A), mouse Synapsin Ia/b transfected 293T: sc-123862 (B), U-87 MG (C) and SK-N-SH (D) whole cell lysates and human cerebellum (E) and mouse cerebellum (F) tissue extracts.



Synapsin Ia/b (A-1): sc-398849. Western blot analysis of Synapsin Ia/b expression in Jurkat (A), IMR-32 (B), EOC 20 (C), BC3H1 (D), C6 (E) and H19-7/IGF-IF (F) whole cell lysates.

SELECT PRODUCT CITATIONS

- Sui, X., et al. 2016. Prostate cancer metastasis to the distal phalanx of the left hallux: the first confirmed case and literature review. *Oncol. Lett.* 12: 1074-1078.
- Ding, J.J., et al. 2018. Pb inhibits hippocampal synaptic transmission via cyclin-dependent kinase-5 dependent Synapsin 1 phosphorylation. *Toxicol. Lett.* 296: 125-131.
- Wang, K.W., et al. 2019. Optogenetics-induced activation of glutamate receptors improves memory function in mice with Alzheimer's disease. *Neural Regen. Res.* 14: 2147-2155.
- Cui, X., et al. 2020. Neuroprotective effect of optogenetics varies with distance from channelrhodopsin-2 expression in an Amyloid- β -injected mouse model of Alzheimer's disease. *Front. Neurosci.* 14: 583628.
- Kim, S., et al. 2021. Dysregulation of mitochondria-lysosome contacts by GBA1 dysfunction in dopaminergic neuronal models of Parkinson's disease. *Nat. Commun.* 12: 1807.
- Zhang, X.Y., et al. 2021. Respiratory syncytial virus infection of microglia exacerbates SH-SY5Y neuronal cell injury by inducing the secretion of inflammatory cytokines: a transwell *in vitro* study. *Iran. J. Basic Med. Sci.* 24: 213-221.

RESEARCH USE

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