Anti-Synapsin I Antibody

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Catalog #: 1926-SYNP **Size:** 100 µl

Cite this Antibody: PhosphoSolutions Cat# 1926-SYNP, RRID:AB_2492242

Host	Applications	Species Tested	Species Reactivity*	Molecular Weight
Rabbit	WB 1:1000 ICC 1:1000-1:2000 IP 1 µl per 200 µg lysate	M, H, R		~78 kDa

Product Description: Affinity purified rabbit polyclonal antibody.

Biological Significance: Synapsin I plays a key role in synaptic plasticity in brain (Feng et al., 2002; Nayak et al., 1996). This effect is due in large part to the ability of the synapsins to regulate the availability of synaptic vesicles for release. In addition to its role in plasticity, the expression of synapsin I is a precise indicator of synapse formation (Moore and Bernstein, 1989; Stone et al., 1994). Thus, synapsin I immunocytochemistry provides a valuable tool for the study of synaptogenesis. The role of synapsin in synaptic plasticity and in synaptogensis is regulated by phosphorylation (Jovanovic et al., 2001; Kao et al., 2002).

Antigen: Native protein purified from bovine brain.

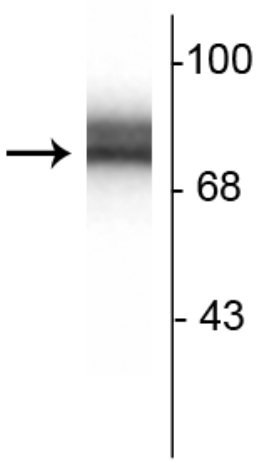
Antibody Specificity: Specific for endogenous levels of the ~78 kDa synapsin I doublet. Immunolabeling blocked by preadsorption of antibody with the protein used to generate the antibody.

Purification Method: Prepared from pooled rabbit serum by -affinity purification using a column to which the native protein was coupled.

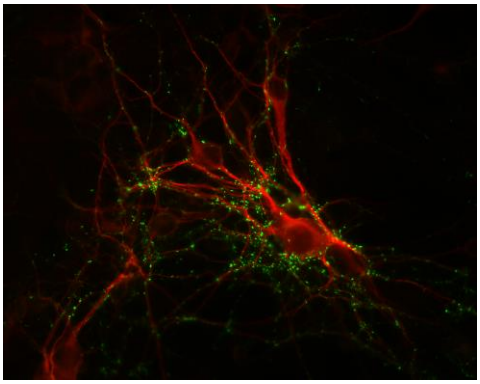
Quality Control Tests: Western blots performed on each lot.

Packaging: 100 µl in 10 mM HEPES (pH 7.5), 150 mM NaCl, 100 µg BSA per ml and 50% glycerol.

Storage and Stability: Shipped on blue ice. Storage at -20°C is recommended, as aliquots may be taken without freeze/thawing due to presence of 50% glycerol. Stable for at least 1 year at -20°C.



Western blot of 10 ug of rat hippocampal lysate showing specific immunolabeling of the ~78 kDa synapsin I doublet protein.



Immunostaining of cultured mouse caudate neurons showing punctate distribution of synapsin (catalog # 1925-SYNP, 1:1000, green) and MAP (red). Cells and photo courtesy of QBMCellScience.

Application Key: WB = Western Blot **IF** = Immunofluorescence **IHC** = Immunohistochemistry **IP** = Immunoprecipitation
Species Reactivity Key: All-All Species **A**-Avian **Amp**-Amphibian **Ar**-*Arabidopsis* **B**-Bovine **C**-Canine **Ch**-Chicken **D**-*Drosophila* **GP**-Guinea Pig **H**-Human **Ha**-Hamster **M**-Mouse **NHP**- Non-human primate **P**-Pig **R**-Rat **S**-Sheep **X**-*Xenopus* **Z**-Zebrafish
*Species assumed based on 100% homology with sequence used as antigen **For Research Use Only**

Product Specific References:

Song, S.H. and Augustine, G.J., 2016. Synapsin isoforms regulating GABA release from hippocampal interneurons. *Journal of Neuroscience*, 36(25), pp.6742-6757.

Wahba, G., Hebert, A.E., Grynspan, D., Staines, W. and Schock, S., 2016. A rapid and efficient method for dissociated cultures of mouse myenteric neurons. *Journal of neuroscience methods*, 261, pp.110-116.

Magupalli, V.G., Mochida, S., Yan, J., Jiang, X., Westenbroek, R.E., Nairn, A.C., Scheuer, T. and Catterall, W.A., 2013. Ca2+-independent activation of Ca2+/calmodulin-dependent protein kinase II bound to the C-terminal domain of CaV2. 1 calcium channels. *Journal of Biological Chemistry*, 288(7), pp.4637-4648.

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Grosshans, D.R., Clayton, D.A., Coultrap, S.J. and Browning, M.D., 2002. LTP leads to rapid surface expression of NMDA but not AMPA receptors in adult rat CA1. *Nature neuroscience*, Jan;5(1):27-33.

General References:

Feng J, Chi P, Blanpied TA, Xu YM, Magarinos AM, Ferreira A, Takahashi RH, Kao HT, McEwen BS, Ryan TA, Augustine GJ, Greengard P (2002) Regulation of neurotransmitter release by synapsin III. J Neurosci 22:4372-4380.

Jovanovic JN, Sihra TS, Nairn AC, Hemmings HC, Jr., Greengard P, Czernik AJ (2001) Opposing changes in phosphorylation of specific sites in synapsin I during Ca2+-dependent glutamate release in isolated nerve terminals. J Neurosci 21:7944-7953.

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Moore RY, Bernstein M (1989) Synaptogenesis in the rat suprachiasmatic nucleus demonstrated by electron microscopy and synapsin I immunoreactivity. J Neurosci 9:2151-2162.

Nayak AS, Moore CI, Browning MD** (1996) CaM kinase II phosphorylation of the presynaptic protein synapsin is persistently increased during expression of long-term potentiation. Proc Natl Acad Sci (USA) 93:15451-15456.

Stone LM, Browning MD**, Finger TE (1994) Differential distribution of the synapsins in the rat olfactory bulb. J Neurosci 14:301-309.

***Dr. Michael Browning, co-author of the cited papers is the CEO and founder of PhosphoSolutions.*

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