

Phospho-Ser603 Synapsin I Antibody
Affinity purified rabbit polyclonal antibody
Catalog # AN1025

Specification

Phospho-Ser603 Synapsin I Antibody - Product Information

Application	WB
Primary Accession	P17599
Reactivity	Rat
Predicted	Bovine, Human, Mouse, Xenopus, Zebrafish
Host	Rabbit
Clonality	polyclonal
Calculated MW	78 KDa

Phospho-Ser603 Synapsin I Antibody - Additional Information

Gene ID	281510
Gene Name	SYN1
Other Names	
Synapsin-1, Synapsin I, SYN1	

Target/Specificity

Synthetic phospho-peptide corresponding to amino acid residues surrounding Ser603 conjugated to KLH.

Dilution

WB~~ 1:1000

Format

Prepared from rabbit serum by affinity purification via sequential chromatography on phospho- and dephosphopeptide affinity columns.

Antibody Specificity

Specific for ~78k synapsin I doublet protein phosphorylated at Ser603. Immunolabeling of the synapsin I band is blocked by λ -phosphatase treatment.

Storage

Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions

Phospho-Ser603 Synapsin I Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Shipping

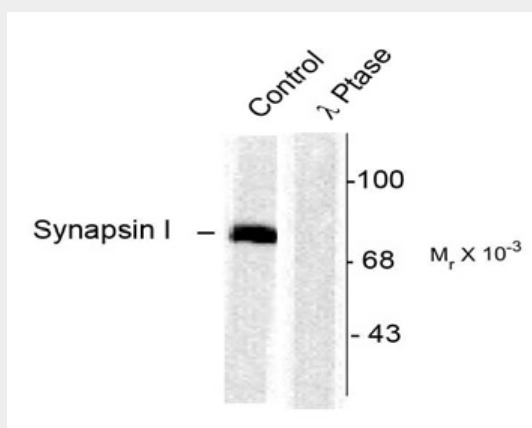
Blue Ice

Phospho-Ser603 Synapsin I Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

Phospho-Ser603 Synapsin I Antibody - Images



Western blot of rat cortex lysate showing specific immunolabeling of the ~78k synapsin I phosphorylated at Ser603 (Control). The phosphospecificity of this labeling is shown in the second lane (lambda-phosphatase: λ-Ptase). The blot is identical to the control except that it was incubated in λ-Ptase (1200 units for 30 min) before being exposed to the phospho-Ser603 synapsin I antibody. The immunolabeling is completely eliminated by treatment with λ-Ptase.

Phospho-Ser603 Synapsin I Antibody - Background

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. The role of synapsin in synaptic plasticity and in synaptogenesis is regulated by phosphorylation (Jovanovic et al., 2001; Kao et al., 2002). Serine 603 is the site on synapsin I that is phosphorylated by calcium calmodulin kinase II and by p21-activated kinases (Sakurada et al., 2002; Czernik et al., 1987). Phosphorylation of this site is thought to regulate synaptic vesicle function (Nayak et al., 1996; Bahler and Greengard, 1987; McGuinness et al., 1989).

Phospho-Ser603 Synapsin I Antibody - References

- Bahler M, Greengard P (1987) Synapsin I bundles F-actin in a phosphorylation-dependent manner. *Nature (London)* 326:704-707.
- Czernik AJ, Pang DT, Greengard P (1987) Amino acid sequences surrounding the cAMP-dependent and calcium/calmodulin-dependent phosphorylation sites in rat and bovine synapsin I. *Proc Natl Acad Sci (USA)* 84:7518-7522.
- Feng J, Chi P, Blanpied TA, Xu YM, Magarinos AM, Fe

reira 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 Ca^{2+} -dependent glutamate release in isolated nerve terminals. *J Neurosci* 21:7944-7953.

Kao HT, Song HJ, Porton B, Ming GL, Hoh J, Abraham M, Czernik AJ, Pieribone VA, Poo MM, Greengard P (2002) A protein kinase A-dependent molecular switch in synapsin I regulates neurite outgrowth. *Nature Neurosci* 5:431-437.

McGuinness TL, Brady ST, Gruner JA, Sugimori M, Linás RR, Greengard P (1989) Phosphorylation-dependent inhibition by synapsin I of organelle movement in squid axoplasm. *J Neurosci* 9:4138-4149.

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

Sakurada K, Kato H, Nagumo H, Hiraoka H, Furuya K, Ikuhara T, Yamakita Y, Fukunaga K, Miyamoto E, Matsumura F, Matsuo YI, Naito Y, Sasaki Y (2002) Synapsin I is phosphorylated at Ser 603 by p21-activated kinases (PAKs) in vitro and in PC12 cells stimulated with bradykinin. *J Biol Chem* 277:45473-45479.

Sergio Leal-Ortiz, Clarissa L. Waites, Ryan Terry-Lorenzo, Pedro Zamorano, Eckart D. Gundelfinger, and Craig C. Garner (2008) Piccolo modulation of Synapsin1a dynamics regulates synaptic vesicle exocytosis. *J. Cell Biol.*, 181: 831 - 846.