

**Phospho-Ser549 Synapsin I Antibody**  
Affinity purified rabbit polyclonal antibody  
Catalog # AN1112

## Specification

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### Phospho-Ser549 Synapsin I Antibody - Product Information

Application	WB, IHC
Primary Accession	<a href="#">P17599</a>
Reactivity	Rat
Predicted	Bovine, Human, Mouse, Monkey
Host	Rabbit
Clonality	polyclonal
Calculated MW	78 KDa

### Phospho-Ser549 Synapsin I Antibody - Additional Information

Gene ID	281510
Gene Name	SYN1
<b>Other Names</b>	
Synapsin-1, Synapsin I, SYN1	

#### Target/Specificity

Synthetic phospho-peptide corresponding to amino acid residues surrounding Ser549 conjugated to KLH.

#### Dilution

WB~~ 1:1000  
IHC~~ 1:500

#### Format

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

#### Antibody Specificity

Specific for ~78k synapsin I doublet phosphorylated at Ser549. Immunolabeling of the synapsin I band is blocked by  $\lambda$ -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-Ser549 Synapsin I Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

#### Shipping

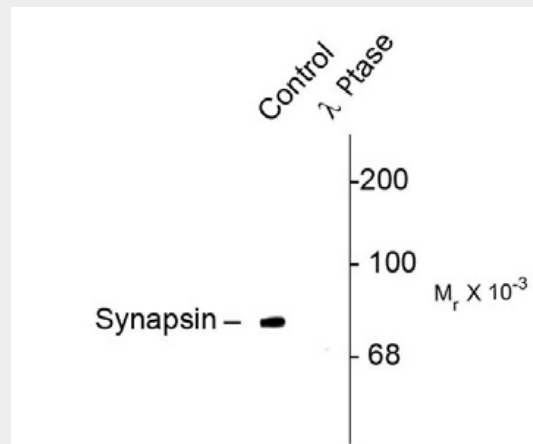
Blue Ice

## Phospho-Ser549 Synapsin I Antibody - Protocols

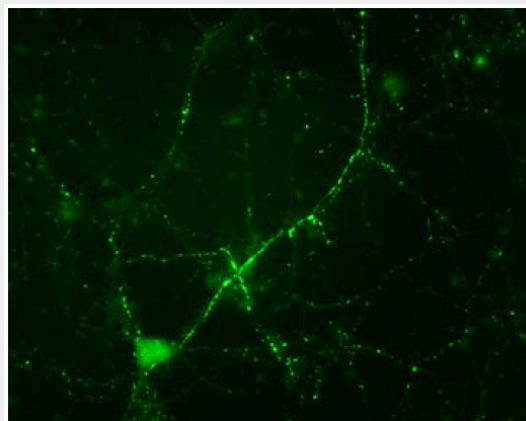
Provided below are standard protocols that you may find useful for product applications.

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

## Phospho-Ser549 Synapsin I Antibody - Images



Western blot of rat cortex lysate showing specific immunolabeling of the ~78k synapsin I phosphorylated at Ser549 (Control). Phosphospecificity is shown in the second lane (lambda-phosphatase:  $\lambda$ -Ptase). The blot is identical to the control except that it was incubated in  $\lambda$ -Ptase (1200 units for 30 min) before being exposed to the phospho Ser549 synapsin I antibody. The immunolabeling is completely eliminated by treatment with  $\lambda$ -Ptase.



Immunostaining of cultured mouse caudate neurons showing synapsin I when phosphorylated at Ser549. Cells and photo courtesy of QBMCellScience.

## Phospho-Ser549 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 ab

ility 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). Ser 549 along with Ser 62 and Ser 67 are the sites of synapsin I that are phosphorylated by MAP kinase (Jovanovic et al., 1996). Phosphorylation and subsequent dephosphorylation of this site is thought to play a key role in synaptic vesicle trafficking.

### **Phospho-Ser549 Synapsin I Antibody - References**

- Jovanovic JN, Benfenati, F, Siow YL, Sihra TS, Sanghera JS, Pelech SL, Greengard P, Czernik AJ (1996) Neurotrophins stimulate phosphorylation of Synapsin I by MAP kinase and regulate Synapsin I-actin interactions. *Neurobiology* 93:3679-3683.
- 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, 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 Ca<sup>2+</sup>-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.
- 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.