

## Datasheet for 612-401-C95

**Synapsin I phospho S603 Antibody****Overview**

<b>Description:</b>	Anti-Synapsin I pS603 (RABBIT) Antibody - 612-401-C95
<b>Item No.:</b>	612-401-C95
<b>Size:</b>	100 µL
<b>Applications:</b>	WB
<b>Reactivity:</b>	Mouse, Rat
<b>Host Species:</b>	Rabbit

**Product Details**

<b>Background:</b>	Synapsin I pS603 antibody is directed against rat Synapsin I, which plays a key role in synaptic plasticity in brain. 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. Serine 603 is the site on synapsin I that is phosphorylated by calcium calmodulin kinase II and by p21-activated kinases. Phosphorylation of this site is thought to regulate synaptic vesicle function. Anti-Synapsin I pS603 Antibody is ideal for investigators involved in Cell Signaling, Neuroscience, Signal Transduction research.
<b>Synonyms:</b>	Synapsin I, SYN1, Synapsin-1
<b>Host Species:</b>	Rabbit
<b>Clonality:</b>	Polyclonal
<b>Format:</b>	IgG

**Target Details**

<b>Gene Name:</b>	Syn1
<b>Reactivity:</b>	Mouse, Rat
<b>PTM Specificity:</b>	Phosphorylation
<b>Immunogen Type:</b>	Conjugated Peptide

<b>Immunogen:</b>	Anti-Synapsin I pS603 Antibody was produced in rabbit by repeated immunizations with synthetic phospho-peptide corresponding to amino acid residues surrounding Ser603 of Synapsin I.
<b>Purity/Specificity:</b>	Anti-Synapsin I pS603 antibody is directed against bovine Synapsin I. The antibody detects Synapsin I that is phosphorylated at S603. The Anti-Synapsin I pS603 antibody was affinity purified from monospecific antiserum by immunoaffinity purification. Immunolabeling of the synapsin I band is blocked by lambda-phosphatase treatment. Reactivity is expected from the following species based on 100% sequence homology: human, Xenopus, bovine, zebra fish.
<b>Relevant Links:</b>	<ul style="list-style-type: none"><li>• <a href="#">NCBI - NP_001104252.1</a></li><li>• <a href="#">UniProtKB - P09951</a></li><li>• <a href="#">GeneID - 24949</a></li></ul>

## Application Details

<b>Tested Applications:</b>	WB
<b>Application Note:</b>	Anti-Synapsin I pS603 (Rabbit) antibody is tested for use in Western Blotting. Specific conditions for reactivity should be optimized by the end user. Expect a band of approximately 78 kDa in size corresponding to synapsin I doublet protein phosphorylated at Ser603.
<b>Assay Dilutions:</b>	All assays should be optimized by the user. Recommended dilutions (if any) may be listed below.
<b>WB:</b>	1:1000

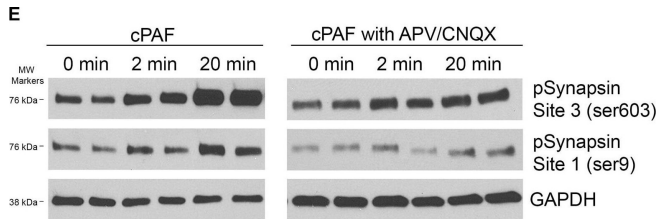
## Formulation

<b>Physical State:</b>	Liquid
<b>Concentration:</b>	Titred value sufficient to run approximately 10 mini blots.
<b>Buffer:</b>	0.01 M HEPES, 0.15 M Sodium Chloride, pH 7.5
<b>Stabilizer:</b>	0.1 mg/ml Bovine Serum Albumin (BSA) - IgG and Protease free, 50% (v/v) Glycerol

## Shipping & Handling

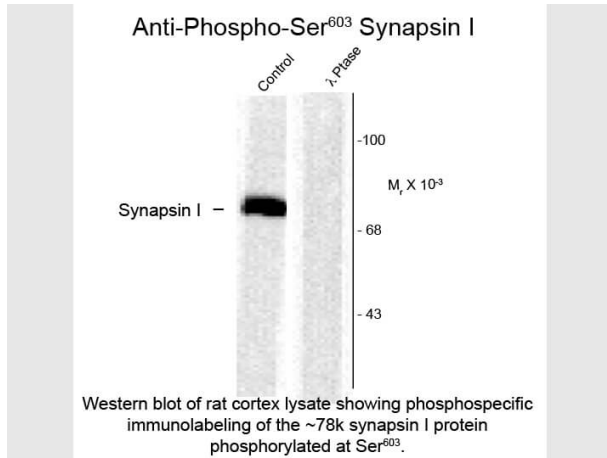
<b>Shipping Condition:</b>	Dry Ice
<b>Storage Condition:</b>	Store vial at -20° C prior to opening. This product is stable at 4° C as an undiluted liquid. For extended storage, aliquot contents and freeze at -20° C or below. Avoid cycles of freezing and thawing. Dilute only prior to immediate use.
<b>Expiration:</b>	Expiration date is one (1) year from date of receipt.

## Images



## Western Blot

cPAF increases synapsin I phosphorylation and synapsin I dispersion from presynaptic boutons during stimulation. (A–D) Hippocampal neurons expressing synapsin I-GFP and Tdtomato were treated with 1  $\mu$ M cPAF for 2 min then stimulated with 900 pulses at 10 Hz. (A) Synapsin I-GFP (Syn-GFP) is clustered at presynaptic boutons while tdtomato fills the entire axon. Scale bar = 2  $\mu$ m. (B) Syn-GFP fluorescence at synapses decreases upon stimulation then reclusters within the bouton. Scale bar = 2  $\mu$ m. (C) Timelapse measurements of the change in Syn-GFP fluorescence intensity obtained from the boutons numbered in (A) normalized to the fluorescence at time 0. (D) Average  $\Delta F/F_0$  in syn-GFP fluorescence from all boutons treated with 1  $\mu$ M cPAF or vehicle. Error bars  $\pm$ SEM (cPAF: 141 boutons from three coverslips; vehicle: 240 boutons from four coverslips;). Non-linear regression of decay part of synapsin I dispersion curve followed by testing the null hypothesis of one curve for all data sets has  $p < 0.0001$ . Statistical analysis comparing cPAF to vehicle treated boutons at the end of stimulation (1.5 min) was done using the Student's t-test  $p = 0.0005$ . (E) Representative western blots showing phosphorylated synapsin I (pSynapsin) at Site 3 (Ser603) and Site 1 (Ser9) and GAPDH immunoreactivity from cell lysates obtained from primary hippocampal cultures that were treated 0, 2, or 20 min with 1  $\mu$ M cPAF. Blot on right was additionally treated for a total of 30 min with 50  $\mu$ M APV and 10  $\mu$ M CNQX to block glutamatergic neurotransmission. (F) pSynapsin/GAPDH ratios calculated by densitometric scanning of the blots. Data are means  $\pm$  SEM with  $n = 4$  (two independent experiments each performed in duplicate). Statistical analysis: one-way ANOVA followed by Dunnett's multiple comparison test to 0 min control. ANOVA: Site 3,  $p = 0.098$ ; Site 3 with APV/CNQX,  $p = 0.024$ ; Site 1,  $p = 0.211$ ; Site 1 with APV/CNQX,  $p = 0.126$ . Dunnett's multiplicity adjusted p-values (compared to 0 min control):  $\square p < 0.1$   $\square p < 0.05$ . Figure provided by CiteAb. Source: Front Cell Neurosci, PMID: 26778968.

**Western Blot**

Western Blot of Rabbit anti-Synapsin I Ser603 antibody. Lane 1: rat cortex lysate (control). Lane 2: λ-Ptase. Load: 10 µg per lane. Primary antibody: Synapsin I Ser603 antibody at 1:1,000 for overnight at 4°C. Secondary antibody: IRDye800™ rabbit secondary antibody at 1:10,000 for 45 min at RT. Block: 5% BLOTTO overnight at 4°C. Predicted/Observed size: 78 kDa for Synapsin I Ser603. Other band(s): none.

**References**

- Engholm-Keller K et al. The temporal profile of activity-dependent presynaptic phospho-signalling reveals long-lasting patterns of poststimulus regulation. *PLoS Biol.* (2019)
- Hammond et al. Platelet Activating Factor Enhances Synaptic Vesicle Exocytosis Via PKC, Elevated Intracellular Calcium, and Modulation of Synapsin 1 Dynamics and Phosphorylation. *Frontiers in Cellular Neuroscience* (2016)

**Disclaimer**

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