Anti-Phospho-Thr^{202} Synaptotagmin Antibody

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Catalog #: p1570-202 **Size:** 100 µl

Cite this Antibody: PhosphoSolutions Cat# p1570-202, RRID:AB_2492252

Host	Applications	Species Tested	Species Reactivity*	Molecular Reference
Rabbit	WB 1:1000 IHC 1:400	R	B, C, Ch, H, M, NHP, Z	~62 kDa

Product Description: Affinity purified rabbit polyclonal antibody.

Biological Significance: Synaptotagmin is widely regarded as the primary calcium sensor for synaptic vesicle exocytosis (Fernandez-Chacon et al., 2001; Wang et al., 2003). Moreover, recent studies indicate that the protein also plays a key role in endocytosis (Poskanzer et al., 2003). Synaptotagmin can be phosphorylated by multiple protein kinases and this may play a key role in modulation of synaptotagmin's ability to influence both the exocytotic and endocytotic components of synaptic transmission (Hilfiker et al., 1999; Lee et al., 2004).

Antigen: Phosphopeptide corresponding to amino acid residues surrounding the phospho-Thr^{202} of rat synaptotagmin.

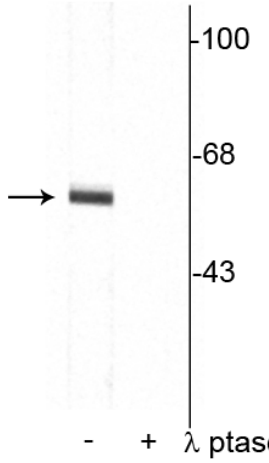
Antibody Specificity: Specific for endogenous levels of the ~62 kDa synaptotagmin protein phosphorylated at Thr^{202}. Immunolabeling is completely eliminated by treatment with λ-Ptase. In some lysates and/or various tissues, additional bands may be seen at ~45 kDa, 75 kDa and 150 kDa.

Purification Method: Prepared from pooled rabbit serum by affinity purification via sequential chromatography on phospho and non-phosphopeptide affinity columns.

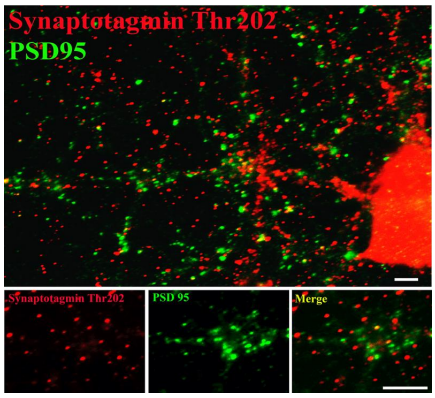
Quality Control Tests: Western blots performed on each lot.

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 rat cortical lysate showing specific immunolabeling of the ~62 kDa synaptotagmin phosphorylated at Thr^{202} in the first lane (-). Phosphospecificity is shown in the second lane (+) where the immunolabeling is completely eliminated by blot treatment with *lambda* phosphatase (λ-Ptase, 1200 units for 30 minutes).



Immunostaining of 14 DIV rat cortical neurons showing synaptotagmin when phosphorylated at Thr^{202} in red and PSD95 in green. Photo courtesy of Gang Liu.

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* **G**-Goat **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**

General References:

Fernandez-Chacon R, Konigstorfer A, Gerber SH, Garcia J, Matos MF, Stevens CF, Brose N, Rizo J, Rosenmund C, Sudhof TC (2001) Synaptotagmin I functions as a calcium regulator of release probability. Nature (London) 410:41-49.

Hilfiker S, Pieribone VA, Nordstedt C, Greengard P, Czernik AJ (1999) Regulation of synaptotagmin I phosphorylation by multiple protein kinases. J Neurochem 73:921-932.

Lee BH, Min X, Heise CJ, Xu BE, Chen S, Shu H, Luby-Phelps K, Goldsmith EJ, Cobb MH (2004) WNK1 phosphorylates synaptotagmin 2 and modulates its membrane binding. Mol Cell 15:741-751.

Poskanzer KE, Marek KW, Sweeney ST, Davis GW (2003) Synaptotagmin I is necessary for compensatory synaptic vesicle endocytosis *in vivo*. Nature (London) 426:559-563.

Wang CT, Lu JC, Bai JH, Chang PY, Martin TFJ, Chapman ER, Jackson MB (2003) Different domains of synaptotagmin control the choice between kiss-and-run and full fusion. Nature (London) 424:943-947.

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