

Product datasheet for **TA328896**

Syp Rabbit Polyclonal Antibody

Product data:

Product Type:	Primary Antibodies
Applications:	IHC, WB
Recommended Dilution:	WB: 1:200-1:2000; IHC: 1:100-1:3000
Reactivity:	Mouse, Rat
Host:	Rabbit
Clonality:	Polyclonal
Immunogen:	Peptide CRQTGNT(S)KELRD, corresponding to amino acid residues 178-190 of rat synaptophysin. 2nd intravesicular loop.
Formulation:	Lyophilized. Concentration before lyophilization ~0.8mg/ml (lot dependent, please refer to CoA along with shipment for actual concentration). Buffer before lyophilization: Phosphate buffered saline (PBS), pH 7.4, 1% BSA, 0.05% NaN ₃ .
Reconstitution Method:	Add 50 ul double distilled water (DDW) to the lyophilized powder.
Purification:	Affinity purified on immobilized antigen.
Conjugation:	Unconjugated
Storage:	Store at -20°C as received.
Stability:	Stable for 12 months from date of receipt.
Gene Name:	synaptophysin
Database Link:	NP_036796 Entrez Gene 20977 Mouse Entrez Gene 24804 Rat P07825



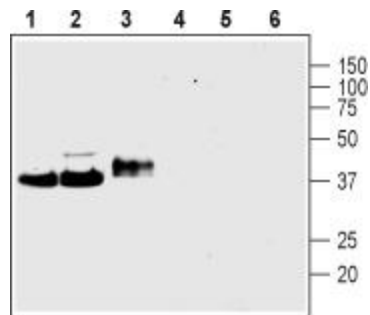
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Background:

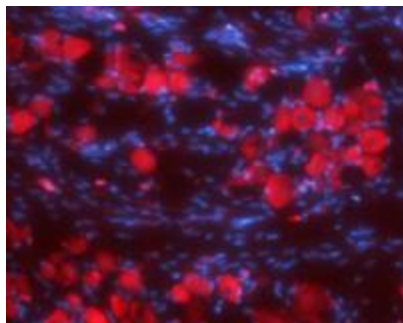
Synaptophysin is the major integral membrane protein of small synaptic vesicles. It belongs to a family of proteins which includes synaptogyrin and synaptoporin. The protein contains 4 transmembrane domains and cytoplasmic N- and C-termini. There are two intravesicular loops that contain disulfide bonds. The protein is N-glycosylated on the first intravesicular loop, a modification important for the synaptic vesicle targeting of synaptophysin. Indeed, a mutant form of the protein, unable to undergo glycosylation, leads to the accumulation of the protein in the cell body of neurons indicating that N-glycosylation is required for the synaptic localization of synaptophysin. The C-terminal tail is extensively phosphorylated on Tyr residues. However, the biological significance of the post-translational modification is not yet determined. Although exact and specific role of synaptophysin remains a mystery, a study suggests that the protein is required for efficient endocytosis of synaptic vesicles in cultured hippocampal neurons. Since synaptophysin is exclusively detected in synaptic vesicles, it is widely used as a marker for presynaptic vesicles. Genetic screening in humans and behavioral studies in rodents show that loss of synaptophysin expression or expression of a truncated form of the protein may be attributed to mental retardation and/or learning deficits. Interestingly though, synaptic transmission in synaptophysin knockout mice remains normal.

Synonyms:

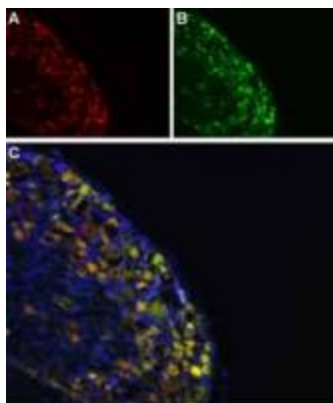
MRX; MRXSYP; synaptophysin

Product images:

Western blot analysis of rat brain membranes (lanes 1 and 4), mouse brain membranes (lanes 2 and 5) and rat PC12 pheochromocytoma cell line lysate (lanes 3 and 6): 1-3. Anti-Synaptophysin antibody, (1:400). 4-6. Anti-Synaptophysin antibody, preincubated with the control peptide antigen.



Expression of Synaptophysin in rat DRG. Immunohistochemical staining of rat dorsal root ganglia (DRG) frozen sections using Anti-Synaptophysin antibody, (1:100). Synaptophysin (red) is expressed in DRG neurons. Hoechst 33342 (blue) shows nuclear staining and is used as the counterstain.



Colocalization of Nav1.8 and Synaptophysin in rat DRG. Immunohistochemical staining of rat DRG frozen section using Anti-Nav1.8-ATTO-594 antibody and Anti-Synaptophysin antibody. A. Nav1.8 staining (red). B. Synaptophysin staining (green). C. Merged image demonstrates a partial overlap in the distribution of Nav1.8 and Synaptophysin within the DRGs. DAPI is used as the counterstain (blue).