**Synaptophysin 1**

Cat.No. 101 002; Polyclonal rabbit antibody, 200 µl antiserum (lyophilized)

**Data Sheet**

**Reconstitution/Storage**

200 µl antiserum, lyophilized. For reconstitution add 200 µl H₂O, then aliquot and store at -20°C until use.

**Applications**

WB: 1 : 1000 up to 1 : 10000 (AP staining)

IP: yes

ICC: 1 : 100 up to 1 : 500

IHC: 1 : 500

IHC-P/FFPE: 1 : 200

EM: yes

ELISA: yes (see remarks)

**Immunogen**

Synthetic peptide corresponding to AA 301 to 313 from human Synaptophysin1 (UniProt Id: P08247)

**Reactivity**

Reacts with: human (P08247), rat (P07825), mouse (Q62277), hamster, cow, chicken, frog, zebrafish.

Other species not tested yet.

**Specificity**

Specific for synaptophysin 1, no cross-reactivity to other synaptophysins.

**matching control**

101-0P

**Remarks**

ELISA: Suitable as detector antibody for sandwich-ELISA with cat. no. 101 011 as capture antibody (protocol for sandwich-ELISA).

**Selected References SYSY Antibodies**

Activity-dependent shedding of the NMDA receptor glycine binding site by matrix metalloproteinase 3: a PUTATIVE mechanism of postsynaptic plasticity.


Regulation of the Hippocampal Network by VGLUT3-Positive CCK- GABAergic Basket Cells.


Frontiers in cellular neuroscience (2017) 11: 140. WB, IP; tested species: mouse

A phosphorylation site regulates sorting of the vesicular acetylcholine transporter to dense core vesicles.


Distribution of synaptic vesicle proteins in the mammalian retina identifies obligatory and facultative components of ribbon synapses.

Von Kriegstein K, Schmitz F, Link E, Südhof TC


Synaptophysin 1 directly controls synaptobrevin 2 from the Presynaptic Active Zone to Prevent Short-Term Depression.

Rajapra A, Gauthier-Kemper A, Böning D, Hüve J, Klingauf J


The GTPase Rab26 links synaptic vesicles to the autophagy pathway.


etLife (2015) 4: e05597. WB, IHC

Alpha-Synuclein transgenic mice, a-SynL62, display α-Syn aggregation and a dopaminergic phenotype reminiscent of Parkinson’s disease.


Synapsin-dependent reserve pool of synaptic vesicles supports replenishment of the readily releasable pool under intense synaptic transmission.

Vasileva M, Horstmann H, Geumann C, Gitter D, Kumer T


Cyclophillin A deficiency accelerates RML-induced prion disease.

Bouybaoune I, Comerio L, Pasetto L, Berti I, Bonetto V, Chiesa R

Neurobiology of disease (2019): 104498. WB; tested species: mouse

LRK22 modifies α-syn pathology and spread in mouse models and human neurons.


Acta neuropathologica (2019): WB; tested species: mouse

Neuronal preservation and reactive gliosis attenuation following neonatal sciatic nerve axotomy by a fluorinated cannabidiol derivative.

Perez M, Cartarozzi LP, Chiarotto GB, Alves de Oliveira S, Guimarães FS, Rodrigues de Oliveira AL

Neuropharmacology (2018): IHC; tested species: rat

Isolation of Synaptic Vesicles from Genetically Engineered Cultured Neurons.


TO BE USED IN VITRO / FOR RESEARCH ONLY

NOT TOXIC, NOT HAZARDOUS, NOT INFECTIOUS, NOT CONTAGIOUS

**Synaptophysin 1** is also referred to as p388-1, is a membrane glycoprotein of synaptic vesicles that is ubiquitously expressed in all neurons and in many endocrine cells. It is currently the most widely used marker for nerve terminals and probably the best marker for the pathologist in differentiating neuroendocrine tumors.

Synaptophysin 1 has four transmembrane domains with both N- and C-terminus facing the cytoplasm. It binds to synaptobrevin 1 and synaptobrevin 2 in detergent extracts but its function has not been elucidated completely. It forms a complex with dynamin at high Ca²⁺ concentration suggesting an involvement in synaptic vesicle endocytosis. As typical for synaptic vesicle proteins, synaptophysin 1 represents a small protein family with two additional members, synaptoporin (synaptophysin 2) and pantophysin. Like synaptophysin 1, synaptoporin is widely expressed in neurons and colocalizes with synaptophysin 1 on synaptic vesicles whereas pantophysin is expressed in all tissues.

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