SYSY
Synaptic Systems

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Synapsin 1

Cat.No. 106 011; Monoclonal mouse antibody, 100 µg purified IgG (lyophilized)

Data Sheet

Reconstitution/ Storage	100 µg purified IgG, lyophilized. For reconstitution add 100 µl H_2O to get a 1mg/ml solution in PBS. 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 : 2000 **IHC**: 1 : 100 up to 1 : 200 **IHC-P/FFPE**: 1 : 200 **EM**: yes **ELISA**: yes (see remarks)
Clone	46.1
Subtype	IgG1
Immunogen	Recombinant protein corresponding to AA 1 to 704 from rat Synapsin1 (UniProt Id: P09951)
Epitop	Epitop: AA 435 to 475 from rat Synapsin1 (UniProt Id: P09951)
Reactivity	Reacts with: human (P17600), rat (P09951), mouse (O88935), mammals. Weaker signal: zebrafish, chicken, other vertebrates. Other species not tested yet.
Specificity	Specific for synapsin 1a and 1b independent of phosphorylation state. (K.O. verified)
Remarks	**ELISA**: Suitable as capture antibody for sandwich-ELISA with cat. no. 106 002 as detector antibody (protocol for sandwich-ELISA).

TO BE USED IN VITRO / FOR RESEARCH ONLY
NOT TOXIC, NOT HAZARDOUS, NOT INFECTIOUS, NOT CONTAGIOUS

Synapsins are neuron-specific phosphoproteins that are exclusively associated with small synaptic vesicles, with little or no expression in other tissues including neuroendocrine cells. In mammals, three distinct synapsin genes (synapsin 1, 2, and 3) encode more than eight neuronal isoforms.
Synapsin 1 is one of the most specific markers of synapses throughout the central and peripheral nervous system. In addition to synaptic nerve terminals, the protein is also present in certain sensory nerve endings. It is expressed in two splice variants (synapsin 1a and synapsin 1b). Synapsin 1 interacts with vesicle membranes as well as with actin and spectrin.
Synapsin 2 is expressed in the nervous system and also two splice variants were described so far, while synapsin 3 shows a more restricted expression pattern and is mainly found in the hypocampus.
Synapsins are major phosphoproteins and are substrates for several protein kinases such as PKA, CaMK I and CaMK II. Synapsin 1 is widely used as reference substrate for calmodulin-dependent protein kinases.

Selected References SYSY Antibodies

Bacterial cytolysin during meningitis disrupts the regulation of glutamate in the brain, leading to synaptic damage.
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PLoS pathogens (2013) 9(6): e1003380. **IHC, WB; tested species: mouse**

Suppression of guanylyl cyclase (beta1 subunit) expression impairs neurite outgrowth and synapse maturation in cultured cerebellar granule cells.
López-Jiménez ME, Bartolomé-Martín D, Sánchez-Prieto J, Torres M
Cell death and differentiation (2009) 16(9): 1266-78. **ICC, WB; tested species: rat**

Astrocytic miR-324-5p is essential for synaptic formation by suppressing the secretion of CCL5 from astrocytes.
Sun C, Zhu L, Ma R, Ren J, Wang J, Gao S, Yang D, Ning K, Ling B, Lu B, Chen X, et al.
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Synaptic control of mRNA translation by reversible assembly of XRN1 bodies.
Luchelli L, Thomas MG, Boccaccio GL
Journal of cell science (2015) 128(8): 1542-54. **ICC, WB**

RIM proteins activate vesicle priming by reversing autoinhibitory homodimerization of Munc13.
Deng L, Kaeser PS, Xu W, Südhof TC
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Robust Induced Presynapse on Artificial Substrate as a Neural Interfacing Method.
Jeon J, Oh MA, Cho W, Yoon SH, Kim JY, Chung TD
ACS applied materials & interfaces (2019) : . **ICC; tested species: rat**

Identification of Embryonic Neural Plate Border Stem Cells and Their Generation by Direct Reprogramming from Adult Human Blood Cells.
Thier MC, Hommerding O, Panten J, Pinna R, García-González D, Berger T, Wörsdörfer P, Assenov Y, Scognamiglio R, Przybylla A, Kaschutnig P, et al.
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Cicvaric A, Bulat T, Bormann D, Yang J, Auer B, Milenkovic I, Cabatic M, Milicevic R, Monje FJ
Food & function (2018) 9(3): 1532-1544. **WB; tested species: mouse**

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Ghézali G, Calvo CF, Pillet LE, Llense F, Ezan P, Pannasch U, Bemelmans AP, Etienne Manneville S, Rouach N
Development (Cambridge, England) (2018) 145(4): . **WB; tested species: mouse**

Identification of Protein Tyrosine Phosphatase Receptor Type O (PTPRO) as a Synaptic Adhesion Molecule that Promotes Synapse Formation.
Jiang W, Wei M, Liu M, Pan Y, Cao D, Yang X, Zhang C
The Journal of neuroscience : the official journal of the Society for Neuroscience (2017) 37(41): 9828-9843. **ICC**

Structural Mechanism for Modulation of Synaptic Neuroligin-Neurexin Signaling by MDGA Proteins.
Elegheert J, Cvetkovska V, Clayton AJ, Heroven C, Vennekens KM, Smukowski SN, Regan MC, Jia W, Smith AC, Furukawa H, Savas JN, et al.
Neuron (2017) 95(4): 896-913.e10. **ICC**

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Neuron (2017) 96(1): 242-244. **ICC; tested species: mouse**

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Molecular psychiatry (2016) 21(12): 1752-1767. **ICC**