

Synapsin 1

Cat.No. 106 011C5; Monoclonal mouse antibody, 100 µg purified IgG (lyophilized)

Data Sheet

Reconstitution/ Storage	100 µg purified IgG, lyophilized, fluorescence-labeled with Oyster [®] 650. Rabbit serum albumin was added for stabilization. For reconstitution add 100 µl H ₂ O to get a 1mg/ml solution in PBS. Either add 1:1 (v/v) glycerol, then aliquot and store at -20°C until use, or store aliquots at -80°C without additives. Reconstitute immediately upon receipt! Avoid bright light when working with the antibody to minimize photo bleaching of the fluorescent dye. The mounting agent Aquatex [®] (Merck Chemicals) is not compatible with Oyster dyes!
Applications	WB: N/A IP: N/A ICC: 1 : 100 up to 1 : 2000 IHC: 1 : 100 up to 1 : 500 IHC-P/FFPE: not tested yet
Label	Oyster 650
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)

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

hippocampus.

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

Combinatorial assessments of brain tissue metabolomics and histopathology in rodent models of human immunodeficiency virus infection.

Epstein AA, Narayanasamy P, Dash PK, High R, Bathena SP, Gorantla S, Poluektova LY, Alnouti Y, Gendelman HE, Boska MD
Journal of neuroimmune pharmacology : the official journal of the Society on NeuroImmune Pharmacology (2013) 8(5): 1224-38.

IHC

Interactions between ICAM-5 and β1 integrins regulate neuronal synapse formation.

Ning L, Tian L, Smirnov S, Vihinen H, Llano O, Vick K, Davis RL, Rivera C, Gahmberg CG
Journal of cell science (2013) 126(Pt 1): 77-89. **ICC**

Selected General References

A phospho-switch controls the dynamic association of synapsins with synaptic vesicles.

Hosaka M, Hammer RE, Südhof TC
Neuron (1999) 24(2): 377-87.

Essential functions of synapsins I and II in synaptic vesicle regulation.

Rosahl TW, Spillane D, Missler M, Herz J, Selig DK, Wolff JR, Hammer RE, Malenka RC, Südhof TC
Nature (1995) 375(6531): 488-93.

The synaptic vesicle cycle: a cascade of protein-protein interactions.

Südhof TC
Nature (1995) 375(6533): 645-53.

Synaptic vesicles and exocytosis.

Jahn R, Südhof TC
Annual review of neuroscience (1994) 17: 219-46.