

## Synapsin 1

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

### Data Sheet

Reconstitution/ Storage	100 µg purified IgG, lyophilized, biotin-labeled. . Rabbit serum albumin was added for stabilization. For reconstitution add 100 µl H <sub>2</sub> O to get a 1mg/ml solution in PBS. Then aliquot and store at -20°C until use.
Applications	<b>WB:</b> 1 : 1000 up to 1 : 10000 (AP staining) <b>IP:</b> yes (see remarks) <b>ICC:</b> 1 : 100 up to 1 : 2000 <b>IHC:</b> 1 : 200 up to 1 : 10000 <b>IHC-P/FFPE:</b> 1 : 1000
Label	biotin
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	<b>IP:</b> Avidin or streptavidin beads are recommended.

### 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.

#### 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.