

Synaptotagmin 1 luminal domain

Cat.No. 105 103C3; Polyclonal rabbit antibody, 50 µg specific antibody (lyophilized)

Data Sheet

Reconstitution/ Storage	50 µg specific antibody, lyophilized. Affinity purified with the immunogen, fluorescence-labeled with Oyster® 550. Rabbit serum albumin was added for stabilization. For reconstitution add 50 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 : 500 IHC: not tested yet IHC-P/FFPE: not tested yet
Label	Oyster 550
Immunogen	Synthetic peptide corresponding to AA 1 to 8 from mouse Synaptotagmin1 (UniProt Id: P46096)
Reactivity	Reacts with: rat (P21707), mouse (P46096). Other species not tested yet. For unknown reasons antibodies raised against the luminal N-terminus of Synaptotagmin 1 show a strong preference for the rat protein.
Specificity	Specific for synaptotagmin 1, no cross-reactivity to synaptotagmin 2.
matching control	105-10P
Remarks	This antibody can be used for labeling of recycling synaptic vesicles by adding to living neurons or as a marker for exocytosis in isolated nerve terminals.

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

Synaptotagmin 1 also known as **p65**, is an integral membrane glycoprotein of neuronal synaptic vesicles and secretory granules of neuroendocrine cells that is widely (but not ubiquitously) expressed in the central and peripheral nervous system. It has a variable N-terminal domain that is exposed to the lumen of the vesicle and a conserved cytoplasmic tail that contains two Ca²⁺-binding C2-domains. Ca²⁺-binding to synaptotagmin triggers exocytosis of synaptic vesicles, thus linking Ca²⁺-influx during depolarization to neurotransmitter release. Luminal antibodies were used in living neurons to label synaptic vesicles from the outside via endocytotic uptake.

Selected References SYSY Antibodies

Structure of excitatory synapses and GABAA receptor localization at inhibitory synapses are regulated by neuroplastin-65. Herrera-Molina R, Sarto-Jackson I, Montenegro-Venegas C, Heine M, Smalla KH, Seidenbecher CI, Beesley PW, Gundelfinger ED, Montag D

The Journal of biological chemistry (2014) 289(13): 8973-88. **UPTAKE; tested species: mouse**

The SNARE protein vti1a functions in dense-core vesicle biogenesis.

Walter AM, Kurps J, de Wit H, Schöning S, Toft-Bertelsen TL, Lauks J, Ziolkiewicz I, Weiss AN, Schulz A, Fischer von Mollard G, Verhage M, et al.

The EMBO journal (2014) 33(15): 1681-97. **ICC; tested species: mouse**

Aberrant neuronal activity-induced signaling and gene expression in a mouse model of RASopathy.

Altmüller F, Pothula S, Annamneedi A, Nakhaei-Rad S, Montenegro-Venegas C, Pina-Fernández E, Marini C, Santos M, Schanze D, Montag D, Ahmadian MR, et al.

PLoS genetics (2017) 13(3): e1006684. **UPTAKE**

Regulated Dynamic Trafficking of Neurexins Inside and Outside of Synaptic Terminals.

Neupert C, Schneider R, Klatt O, Reissner C, Repetto D, Biermann B, Niesmann K, Missler M, Heine M

The Journal of neuroscience : the official journal of the Society for Neuroscience (2015) 35(40): 13629-47. **ICC**

Retrograde changes in presynaptic function driven by dendritic mTORC1.

Henry FE, McCartney AJ, Neely R, Perez AS, Carruthers CJ, Stuenkel EL, Inoki K, Sutton MA

The Journal of neuroscience : the official journal of the Society for Neuroscience (2012) 32(48): 17128-42. **UPTAKE; tested species: rat**

Selected General References

RAB3 and synaptotagmin: the yin and yang of synaptic membrane fusion.

Geppert M, Südhof TC

Annual review of neuroscience (1998) 21: 75-95.

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.

Synaptotagmin I: a major Ca²⁺ sensor for transmitter release at a central synapse.

Geppert M, Goda Y, Hammer RE, Li C, Rosahl TW, Stevens CF, Südhof TC

Cell (1994) 79(4): 717-27.

Synaptotagmin: a calcium sensor on the synaptic vesicle surface.

Brose N, Petrenko AG, Südhof TC, Jahn R

Science (New York, N.Y.) (1992) 256(5059): 1021-5.

Phospholipid binding by a synaptic vesicle protein homologous to the regulatory region of protein kinase C.

Perin MS, Fried VA, Mignery GA, Jahn R, Südhof TC

Nature (1990) 345(6272): 260-3.