Synaptotagmin 1 luminal domain

Cat.No. 105 221; Monoclonal mouse antibody, 200 µl hybridoma supernatant (lyophilized)

Data Sheet

Reconstitution/Storage
200 µl hybridoma supernatant, 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
IHC: 1 : 500
IHC-P/FFPE: not tested yet

Clone
604.1

Subtype
IgG3 (κ light chain)

Immunogen
Synthetic peptide corresponding to AA 1 to 12 from rat Synaptotagmin1 (UniProt Id: P21707)

Epitop
Epitop: AA 1 to 12 from rat Synaptotagmin1 (UniProt Id: P21707)

Reactivity
Reacts with: rat (P21707). No signal: mouse (P46096), zebrafish. Other species not tested yet.

Specificity
Specific for rat synaptotagmin 1, no cross-reactivity to other synaptotagmins. (K.O. verified)

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. This antibody is of high affinity but not as strong as clone 41.1. This antibody is strongly recommended when binding to Protein G is required.

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 endocytic uptake.

Selected References SYSY Antibodies

Structural elements that underlie Doc2B function during asynchronous synaptic transmission.
Xue R, Gaffaney JD, Chapman ER

Storage and uptake of D-serine into astrocytic synaptic-like vesicles specify gliotransmission.

SV2B regulates synaptotagmin 1 by direct interaction.
Laizzell DR, Belzerai R, Thakur P, Sherry DM, Rancz J

Mechanism-based rescue of Munc18-1 dysfunction in varied encephalopathies by chemical chaperones.

Loss of Doc2-Dependent Spontaneous Neurotransmission Augments Glutamatergic Synaptic Strength.
Ramirez DMO, Crawford DC, Chanaday NS, Trauterman B, Monteggia LM, Kavalali ET

BDNF enhances spontaneous and activity-dependent neurotransmitter release at excitatory terminals but not at inhibitory terminals in hippocampal neurons.

Selected General References

RAB3 and synaptotagmin: the yin and yang of synaptic membrane fusion.
Geppert M, Südhof TC

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