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 Sulfo-Cyanine 3. Albumin was added for stabilization. For reconstitution add 50 µl H₂O 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 bleeching of the fluorescent dye.

Applications

<table>
<thead>
<tr>
<th>Method</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>WB</td>
<td>N/A</td>
</tr>
<tr>
<td>IP</td>
<td>N/A</td>
</tr>
<tr>
<td>ICC</td>
<td>1:100 up to 1:500</td>
</tr>
<tr>
<td>IHC</td>
<td>not tested yet</td>
</tr>
<tr>
<td>IHC-P/FFPE</td>
<td>not tested yet</td>
</tr>
</tbody>
</table>

Label
Sulfo-Cyanine 3

Immunogen
Synthetic peptide corresponding to AA 1 to 8 from mouse Synaptotagmin 1 (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.

Selected References SYSY Antibodies

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

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

Parkin contributes to synaptic vesicle autophagy in Bassoon-deficient mice.
eLife (2020) 5: UPTAKE; tested species: mouse

Fluoxetine Suppresses Glutamate- and GABA-Mediated Neurotransmission by Altering SNARE Complex.
Henderson-Heine M, Bollinger EJ, Smalla KH, Montag D

A Unique Homeostatic Signaling Pathway Links Synaptic Inactivity to Postsynaptic mTORC1.
Henry FE, Wang X, Serrano D, Perez AS, Carruthers CJL, Stuenkel EL, Sutton MA

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

Regulated Dynamic Trafficking of Neurexins Inside and Outside of Synaptic Terminals.
Neupert C, Schneider R, Klett O, Reissner C, Repetto D, Biermann B, Niesmann K, Missler M, Heine M

Retrograde changes in presynaptic function driven by dendritic mTORC1.

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.

Lumenal antibodies were used in living neurons to label synaptic vesicles from the outside via endocytic uptake.