SYSY Antibodies

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Synaptotagmin11

Cat.No. 270 003; Polyclonal rabbit antibody, 50 µg specific antibody (lyophilized)

Data Sheet

Reconstitution/ Storage	50 µg specific antibody, lyophilized. Affinity purified with the immunogen. Albumin and azide were added for stabilization. For **reconstitution** add 50 µl H_2O to get a 1mg/ml solution in PBS. Then aliquot and store at -20°C to -80°C until use. Antibodies should be stored at +4°C when still lyophilized. Do not freeze! For detailed information, see back of the data sheet.
Applications	**WB**: 1 : 1000 (AP staining) **IP**: not tested yet **ICC**: 1 : 500 **IHC**: 1 : 500 **IHC-P (FFPE)**: not tested yet
Immunogen	Recombinant protein corresponding to AA 70 to 154 from mouse Synaptotagmin11 (UniProt Id: Q9R0N3)
Reactivity	Reacts with: rat (O08835), mouse (Q9R0N3). Other species not tested yet.
Specificity	K.D. validated PubMed: 28686317
Matching control	270-0P

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

Background

Up to now at least 17 synaptotagmins have been identified. **Synaptotagmin11**, a close relative of synaptotagmin4, is mainly expressed in the brain. It is composed of a vesicular, a transmembrane and two C2 domains. Only the C2B domain is able to bind calcium. In the C2A domain one of the calcium binding aspartates has been substituted for serine leading to a loss of its binding capabilities. Synaptotagmin11 has been shown to localize mainly to excitatory and inhibitory presynaptic terminals.

Selected References for 270 003

Injured astrocytes are repaired by Synaptotagmin XI-regulated lysosome exocytosis.
Sreetama SC, Takano T, Nedergaard M, Simon SM, Jaiswal JK
Cell death and differentiation (2016) 234: 596-607. . **WB, ICC; tested species: mouse**

Synaptotagmin-11 deficiency mediates schizophrenia-like behaviors in mice via dopamine over-transmission.
Chen Y, Gu Y, Wang B, Wei A, Dong N, Jiang Y, Liu X, Zhu L, Zhu F, Tan T, Jing Z, et al.
Nature communications (2024) 151: 10571. . **IHC, WB; KO verified; tested species: mouse,human**

Synaptotagmin-11 facilitates assembly of a presynaptic signaling complex in post-Golgi cargo vesicles.
Trovò L, Kouvaros S, Schwenk J, Fernandez-Fernandez D, Fritzius T, Rem PD, Früh S, Gassmann M, Fakler B, Bischofberger J, Bettler B, et al.
EMBO reports (2024) : . . **WB, ICC; tested species: mouse,human**

A novel method for culturing stellate astrocytes reveals spatially distinct Ca2+ signaling and vesicle recycling in astrocytic processes.
Wolfes AC, Ahmed S, Awasthi A, Stahlberg MA, Rajput A, Magruder DS, Bonn S, Dean C
The Journal of general physiology (2017) 1491: 149-170. . **ICC, WB**

Mutations in Parkinsonism-linked endocytic proteins synaptojanin1 and auxilin have synergistic effects on dopaminergic axonal pathology.
Ng XY, Wu Y, Lin Y, Yaqoob SM, Greene LE, De Camilli P, Cao M
NPJ Parkinson's disease (2023) 91: 26. . **WB; tested species: mouse**

Synaptotagmin-11 inhibits cytokine secretion and phagocytosis in microglia.
Du C, Wang Y, Zhang F, Yan S, Guan Y, Gong X, Zhang T, Cui X, Wang X, Zhang CX
Glia (2017) 6510: 1656-1667. . **WB; KD verified; tested species: mouse**

Selected General References

Developmental expression and subcellular distribution of synaptotagmin 11 in rat hippocampus.
Yeo H et al. Neuroscience (2012) PubMed:22960622

Differential mRNA expression patterns of the synaptotagmin gene family in the rodent brain.
Mittelsteadt T et al. J. Comp. Neurol. (2009) PubMed:19030179

Synaptotagmin XI as a candidate gene for susceptibility to schizophrenia.
Inoue S et al. Am. J. Med. Genet. B Neuropsychiatr. Genet. (2007) PubMed:17192956

Screening for mutations in synaptotagmin XI in Parkinson's disease.
Glass AS et al. J. Neural Transm. Suppl. (2004) PubMed:15354386

The autosomal recessive juvenile Parkinson disease gene product, parkin, interacts with and ubiquitinates synaptotagmin XI.
Huynh DP et al. Hum. Mol. Genet. (2003) PubMed:12925569

Access the online factsheet including applicable protocols at https://sysy.com/product/270003 or scan the QR-code.

FAQ - How should I store my antibody?

Shipping Conditions

- All SYSY antibodies and control proteins/peptides are shipped lyophilized (vacuum freeze-dried). In this form, they remain stable without loss of quality at ambient temperatures for several weeks.

Storage of Sealed Vials after Delivery

- **Unlabeled** and **biotin-labeled antibodies** and **control proteins** should be stored at **4°C** before reconstitution. **Do not freeze lyophilized antibodies**. Temperatures below 0°C may impair performance.
- **Fluorescence-labeled antibodies** should be reconstituted immediately upon receipt. Long-term storage of lyophilized fluorophore-conjugates may cause aggregation.
- **Control peptides** should be stored at -20°C before reconstitution.

Long Term Storage after Reconstitution (General Considerations)

- **Do not use frost-free ("no-frost") freezers.** These units periodically warm to remove ice buildup, causing freeze–thaw cycles that can damage antibodies.
- Store vials in areas with minimal temperature fluctuation - preferably toward the back of the freezer, not on the door.
- Aliquot reconstituted antibodies and store at –20°C to –80°C.
- Avoid very small aliquots (<20 µL), as evaporation and adsorption to tube surfaces can reduce antibody concentration and activity.
- Use the smallest practical storage vial to minimize surface area.
- Adding glycerol to a final concentration of 50% prevents freezing at -20°C, allowing storage in liquid form and effectively avoiding freeze–thaw cycles.

Product Specific Hints for Storage

Control proteins / peptides

- Store at -20°C to -80°C

Monoclonal Antibodies

- **Ascites and hybridoma supernatant:** Store at -20°C to -80°C
  Prolonged storage at 4°C is not recommended, as proteases present in ascites may degrade antibodies.
- **Purified IgG:** Store at -20°C to -80°C
  Adding a carrier protein (e.g., BSA) enhances long-term stability.
  Many SYSY antibodies already contain carrier proteins - refer to the respective datasheet for details.

Polyclonal Antibodies

- **Crude antisera:** Can be stored at 4°C with antimicrobials added, but -20°C to -80°C is preferred
- **Affinity-purified antibodies:** Less stable than antisera; store at -20°C to -80°C
  Adding a carrier protein such as BSA improves long-term stability.
  Most SYSY antibodies already contain carrier proteins - refer to the respective datasheet for details.

Fluorescence-labeled Antibodies

- Store as a liquid with 1:1 (v/v) glycerol at -20°C, and protect from light exposure

Avoid repeated freeze-thaw cycles for all antibodies!

FAQ - How should I reconstitute my antibody?

Reconstitution

- All purified SYSY antibodies are lyophilized from PBS. To reconstitute the antibody in PBS, add the volume of deionized water specified in the corresponding datasheet. If a larger final volume is desired, first add the recommended amount of water, then adjust with PBS and, if needed, add a stabilizing carrier protein (e.g., BSA) to a final concentration of 2%. Some SYSY antibodies already contain albumin; please take this into account before adding additional carrier protein.

For complete reconstitution, carefully remove the vial cap. After adding water, briefly vortex the solution. To collect the liquid at the bottom of the vial, place the vial inside a 50 ml centrifuge tube padded with paper and centrifuge briefly.

- If desired, small amounts of azide or thimerosal may be added to prevent microbial growth. This is particularly recommended when storing an aliquot at 4°C.
- After reconstitution of fluorescence-labeled antibodies, add glycerol 1:1 (v/v) to achieve a final concentration of 50%. This prevents freezing at –20°C and keeps the antibody in liquid form, effectively avoiding freeze–thaw cycles.
- Glycerol may also be added to unlabeled primary antibodies as a general measure to prevent freeze–thaw damage.
- For further guidance, please refer to our **storage tips** and recommendations for reconstituted antibodies, control peptides, and control proteins.