SYSY Antibodies

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Synaptogyrin1

Cat.No. 103 002; Polyclonal rabbit antibody, 200 µl antiserum (lyophilized)

Data Sheet

Reconstitution/ Storage	200 µl antiserum, lyophilized. For **reconstitution** add 200 µl H_2O, then aliquot and store at -20°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 up to 1 : 5000 (AP staining) **IP**: yes **ICC**: 1 : 500 up to 1 : 1000 **IHC**: 1 : 200 **IHC-P (FFPE)**: 1 : 500 **ELISA**: yes (see remarks)
Immunogen	Synthetic peptide corresponding to AA 220 to 234 from rat Synaptogyrin1 (UniProt Id: Q62876)
Reactivity	Reacts with: human (O43759), rat (Q62876), mouse (O55100), hamster, chicken. No signal: zebrafish. Other species not tested yet.
Specificity	K.O. validated PubMed: 31090538
Matching control	103-0P
Remarks	**ELISA**: The ELISA-protocol for membrane proteins is required. Suitable as detector antibody for sandwich-ELISA. Please refer to the protocol for suitable capture antibodies.

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

Background

Synaptogyrins are tyrosine-phosphorylated proteins with two neuronal (**synaptogyrin 1** and 3) and one ubiquitous, synaptogyrin 2 or cellugyrin isoform.
Synaptogyrins are integral membrane proteins and localize to the membrane of small vesicles.
Synaptogyrin 1 and 3 are expressed in the brain whereby the latter shows a more restricted expression pattern with high levels in the mossy fiber region of the hippocampus, substantia nigra pars reticulata, pallidum, and deep cerebellar nuclei.
Synaptogyrin 2/cellugyrin, a close relative, is expressed in all tissues, for instance, in distinct populations of GLUT 4 containing vesicles.

Selected References for 103 002

Composition of isolated synaptic boutons reveals the amounts of vesicle trafficking proteins.
Wilhelm BG, Mandad S, Truckenbrodt S, Kröhnert K, Schäfer C, Rammner B, Koo SJ, Claßen GA, Krauss M, Haucke V, Urlaub H, et al.
Science (New York, N.Y.) (2014) 3446187: 1023-8. . **ICC, IHC; tested species: mouse,rat**

Distribution of synaptic vesicle proteins in the mammalian retina identifies obligatory and facultative components of ribbon synapses.
Von Kriegstein K, Schmitz F, Link E, Südhof TC
The European journal of neuroscience (1999) 114: 1335-48. . **WB**

Structure and topography of the synaptic V-ATPase-synaptophysin complex.
Wang C, Jiang W, Leitz J, Yang K, Esquivies L, Wang X, Shen X, Held RG, Adams DJ, Basta T, Hampton L, et al.
Nature (2024) 6318022: 899-904. . **WB; tested species: mouse**

Mitofusin 2 Sustains the Axonal Mitochondrial Network to Support Presynaptic Ca2+ Homeostasis and the Synaptic Vesicle Cycle in Rat Hippocampal Axons.
Vevea JD, Chapman ER
The Journal of neuroscience : the official journal of the Society for Neuroscience (2023) 4319: 3421-3438. . **WB; tested species: rat**

Autophagy enables microglia to engage amyloid plaques and prevents microglial senescence.
Choi I, Wang M, Yoo S, Xu P, Seegobin SP, Li X, Han X, Wang Q, Peng J, Zhang B, Yue Z, et al.
Nature cell biology (2023) 257: 963-974. . **WB; tested species: mouse**

Lysosomal exocytosis releases pathogenic α-synuclein species from neurons in synucleinopathy models.
Xie YX, Naseri NN, Fels J, Kharel P, Na Y, Lane D, Burré J, Sharma M
Nature communications (2022) 131: 4918. . **WB; tested species: mouse**

Lowering Synaptogyrin-3 expression rescues Tau-induced memory defects and synaptic loss in the presence of microglial activation.
Largo-Barrientos P, Apóstolo N, Creemers E, Callaerts-Vegh Z, Swerts J, Davies C, McInnes J, Wierda K, De Strooper B, Spires-Jones T, de Wit J, et al.
Neuron (2021) : . . **IHC; tested species: mouse**

Acute disruption of the synaptic vesicle membrane protein synaptotagmin 1 using knockoff in mouse hippocampal neurons.
Vevea JD, Chapman ER
eLife (2020) 9: . . **WB; tested species: mouse**

Synaptic Vesicle Precursors and Lysosomes Are Transported by Different Mechanisms in the Axon of Mammalian Neurons.
De Pace R, Britt DJ, Mercurio J, Foster AM, Djavaherian L, Hoffmann V, Abebe D, Bonifacino JS
Cell reports (2020) 3111: 107775. . **WB; tested species: mouse**

Elevated synaptic vesicle release probability in synaptophysin/gyrin family quadruple knockouts.
Raja MK, Preobraschenski J, Del Olmo-Cabrera S, Martinez-Turrillas R, Jahn R, Perez-Otano I, Wesseling JF
eLife (2019) 8: . . **WB; KO verified; tested species: mouse**

Access the online factsheet including applicable protocols at https://sysy.com/product/103002 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.