SYSY Antibodies

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Gephyrin

Cat.No. 147 011C3; Monoclonal mouse antibody, 100 µg purified IgG (lyophilized)

Data Sheet

Reconstitution/ Storage	100 µg purified IgG, lyophilized, fluorescence-labeled with Oyster 550. Albumin was added for stabilization. For **reconstitution** add 100 µl H_2O 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.The mounting agent Aquatex®(Merck Chemicals) is not compatible with Oyster dyes! For detailed information, see back of the data sheet.
Applications	**WB**: N/A **IP**: N/A **ICC**: 1 : 250 up to 1 : 500 **IHC**: not tested yet **IHC-P (FFPE)**: not recommended
Label	Oyster 550
Clone	mAb7a
Subtype	IgG1 (κ light chain)
Immunogen	Nativ Protein corresponding to AA 1 to 768 from rat Gephyrin (UniProt Id: Q03555)
Epitop	AA 264 to 276 from rat Gephyrin (UniProt Id: Q03555)
Reactivity	Reacts with: human (Q9NQX3), rat (Q03555), mouse (Q8BUV3), pig, goldfish, zebrafish. Other species not tested yet.
Specificity	Specific for the brain specific 93 kDa splice variant phosphorylated at Ser-270. K.O. validated

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

Background

Gephyrin is a bifunctional protein which is essential for both synaptic clustering of inhibitory neurotransmitter receptors in the central nervous system and the biosynthesis of the molybdenum cofactor (MoCo) in peripheral tissues. It co-purifies with the inhibitory glycine receptor (GlyR) and is expressed abundantly in all brain areas which contain synapses.

Selected References for 147 011C3

Cadherin-10 Maintains Excitatory/Inhibitory Ratio through Interactions with Synaptic Proteins.
Smith KR, Jones KA, Kopeikina KJ, Burette AC, Copits BA, Yoon S, Forrest MP, Fawcett-Patel JM, Hanley JG, Weinberg RJ, Swanson GT, et al.
The Journal of neuroscience : the official journal of the Society for Neuroscience (2017) 3746: 11127-11139. . **ICC; tested species: rat**

Gephyrin clusters are absent from small diameter primary afferent terminals despite the presence of GABA(A) receptors.
Lorenzo LE, Godin AG, Wang F, St-Louis M, Carbonetto S, Wiseman PW, Ribeiro-da-Silva A, De Koninck Y
The Journal of neuroscience : the official journal of the Society for Neuroscience (2014) 3424: 8300-17. . **IHC; tested species: rat**

GABAA and Glycine Receptor-Mediated Inhibitory Synaptic Transmission onto Adult Rat Lamina IIi PKCγ-Interneurons: Pharmacological but Not Anatomical Specialization.
El Khoueiry C, Alba-Delgado C, Antri M, Gutierrez-Mecinas M, Todd AJ, Artola A, Dallel R
Cells (2022) 118: . . **IHC; tested species: rat**

ATG4D is the main ATG8 delipidating enzyme in mammalian cells and protects against cerebellar neurodegeneration.
Tamargo-Gómez I, Martínez-García GG, Suárez MF, Rey V, Fueyo A, Codina-Martínez H, Bretones G, Caravia XM, Morel E, Dupont N, Cabo R, et al.
Cell death and differentiation (2021) 289: 2651-2672. . **IHC; tested species: mouse**

Gephyrin-Lacking PV Synapses on Neocortical Pyramidal Neurons.
Kuljis DA, Micheva KD, Ray A, Wegner W, Bowman R, Madison DV, Willig KI, Barth AL
International journal of molecular sciences (2021) 2218: . . **IHC; tested species: mouse**

Enhancing neuronal chloride extrusion rescues α2/α3 GABAA-mediated analgesia in neuropathic pain.
Lorenzo LE, Godin AG, Ferrini F, Bachand K, Plasencia-Fernandez I, Labrecque S, Girard AA, Boudreau D, Kianicka I, Gagnon M, Doyon N, et al.
Nature communications (2020) 111: 869. . **IHC; tested species: rat**

The role of calretinin-expressing granule cells in olfactory bulb functions and odor behavior.
Hardy D, Malvaut S, Breton-Provencher V, Saghatelyan A
Scientific reports (2018) 81: 9385. . **IHC; tested species: mouse**

α5GABAA Receptors Mediate Tonic Inhibition in the Spinal Cord Dorsal Horn and Contribute to the Resolution Of Hyperalgesia.
Perez-Sanchez J, Lorenzo LE, Lecker I, Zurek AA, Labrakakis C, Bridgwater EM, Orser BA, De Koninck Y, Bonin RP
Journal of neuroscience research (2017) 956: 1307-1318. . **IHC; tested species: mouse**

Selected General References

Identification of multiple gephyrin variants in different organs of the adult rat.
Hermann A et al. Biochem. Biophys. Res. Commun. (2001) PubMed:11263972

Widespread expression of gephyrin, a putative glycine receptor-tubulin linker protein, in rat brain.
Kirsch J et al. Brain Res. (1993) PubMed:8242343

Distribution of gephyrin transcripts in the adult and developing rat brain.
Kirsch J et al. Eur. J. Neurosci. (1993) PubMed:8281317

Access the online factsheet including applicable protocols at https://sysy.com/product/147011C3 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.