SYSY Antibodies

Rudolf-Wissell-Str. 28a
37079 Göttingen, Germany
Phone: +49 551-50556-0
Fax: +49 551-50556-384
E-mail: sales@sysy.com
Web: www.sysy.com

Gephyrin

Cat.No. 147 018; Recombinant rabbit antibody, 200 µl recombinant IgG supernatant (lyophilized)

Data Sheet

Reconstitution/ Storage	200 µl purified recombinant IgG supernatant, 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**: not recommended (see remarks) **IP**: not recommended (see remarks) **ICC**: 1 : 1000 **IHC**: 1 : 500 up to 1 : 1000 (see remarks) **IHC-P (FFPE)**: not recommended **IHC-Fr**: 1 : 500 (see remarks)
Clone	RbmAb7a
Subtype	IgG1 (κ light chain)
Immunogen	Nativ Protein corresponding to AA 1 to 768 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
Remarks	This antibody is a chimeric antibody based on the well known monoclonal mouse antibody mAb7a. The constant regions of the heavy and light chains have been replaced with rabbit specific sequences. The antibody can therefore be used with standard anti-rabbit secondary reagents. **WB**: Clone 3B11 (cat. no. 147 111) is highly recommended. **IP**: Clone 3B11 (cat. no. 147 111) is highly recommended. **IHC**: Antigen retrieval with citrate buffer pH 6 can be applied to improve the signal-to-noise ratio. Alternatively, the mild fixation protocol according to in Schneider Gasser et al. 2006, can be applied. Clone mAb7a and its recombinant derivatives can cause non-specific nuclear staining, which becomes more pronounced after AGR treatment. The culture supernatants (147 021, 147 318 and 147 018) are less prone to this effect and are the preferred choices for IHC experiments. **IHC-Fr**: The following fixatives are possible: acetone, 4% formaldehyde/PFA, methanol-acetone, methanol. Signal intensities as follows: acetone > PFA > acetone-methanol > methanol.

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 147 018

ErbB4 promotes inhibitory synapse formation by cell adhesion, independent of its kinase activity.
Luo B, Liu Z, Lin D, Chen W, Ren D, Yu Z, Xiong M, Zhao C, Fei E, Li B
Translational psychiatry (2021) 111: 361. . **WB, ICC; tested species: mouse**

ROCK/PKA inhibition rescues hippocampal hyperexcitability and GABAergic neuron alterations in Oligophrenin-1 Knock-out mouse model of X-linked intellectual disability.
Busti I, Allegra M, Spalletti C, Panzi C, Restani L, Billuart P, Caleo M
The Journal of neuroscience : the official journal of the Society for Neuroscience (2020) : . . **IHC; tested species: mouse**

Chronic benzodiazepine treatment triggers gephyrin scaffold destabilization and GABAAR subsynaptic reorganization.
Chapman CA, Povysheva N, Tarr TB, Nuwer JL, Meriney SD, Johnson JW, Jacob TC
Frontiers in cellular neuroscience (2025) 19: 1624813. . **ICC; tested species: rat**

miR-143-3p modulates depressive-like behaviors via Lasp1 in the mouse ventral hippocampus.
Yu H, Li X, Zhang Q, Geng L, Su B, Wang Y
Communications biology (2024) 71: 944. . **IHC; tested species: mouse**

Excitation-inhibition imbalance disrupts visual familiarity in amyloid and non-pathology conditions.
Niraula S, Doderer JJ, Indulkar S, Berry KP, Hauser WL, L'Esperance OJ, Deng JZ, Keeter G, Rouse AG, Subramanian J
Cell reports (2023) 421: 111946. . **IHC; tested species: mouse**

Noncanonical Activity of Tissue Inhibitor of Metalloproteinases 2 (TIMP2) Improves Cognition and Synapse Density in Aging.
Britton R, Wasley T, Harish R, Holz C, Hall J, Yee DC, Melton Witt J, Booth EA, Braithwaite S, Czirr E, Kerrisk Campbell M, et al.
eNeuro (2023) 106: . . **IHC; tested species: mouse**

Reprogramming reactive glia into interneurons reduces chronic seizure activity in a mouse model of mesial temporal lobe epilepsy.
Lentini C, d'Orange M, Marichal N, Trottmann MM, Vignoles R, Foucault L, Verrier C, Massera C, Raineteau O, Conzelmann KK, Rival-Gervier S, et al.
Cell stem cell (2021) : . . **IHC; tested species: mouse**

Spinal Wnt5a Plays a Key Role in Spinal Dendritic Spine Remodeling in Neuropathic and Inflammatory Pain Models and in the Proalgesic Effects of Peripheral Wnt3a.
Simonetti M, Kuner R
The Journal of neuroscience : the official journal of the Society for Neuroscience (2020) 4035: 6664-6677. . **IHC; tested species: mouse**

Surfaceome dynamics reveal proteostasis-independent reorganization of neuronal surface proteins during development and synaptic plasticity.
van Oostrum M, Campbell B, Seng C, Müller M, Tom Dieck S, Hammer J, Pedrioli PGA, Földy C, Tyagarajan SK, Wollscheid B
Nature communications (2020) 111: 4990. . **ICC; tested species: rat**

A Conserved Tyrosine Residue in Slitrk3 Carboxyl-Terminus Is Critical for GABAergic Synapse Development.
Li J, Han W, Wu K, Li YD, Liu Q, Lu W
Frontiers in molecular neuroscience (2019) 12: 213. . **ICC; 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

Access the online factsheet including applicable protocols at https://sysy.com/product/147018 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.