SYSY Antibodies

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RIM2

Cat.No. 140 303; 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**: yes **ICC**: not tested yet **IHC**: 1 : 1000 (see remarks) **IHC-P (FFPE)**: not tested yet
Immunogen	Recombinant protein corresponding to AA 909 to 1076 from rat RIM2-4C (UniProt Id: Q9JIS1-3)
Reactivity	Reacts with: rat (Q9JIS1), mouse (Q9EQZ7). No signal: zebrafish. Other species not tested yet.
Matching control	140-03P
Remarks	**IHC**: For optimal results in retina tissue, follow the retina protocol. Validation in other tissue is pending.

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

Background

RIMs are presynaptic active zone proteins that regulate Ca^{2+} triggered release of neurotransmitters. RIM 1α and RIM 2α are composed of an N-terminal zinc-finger domain, a central PDZ domain and two C-terminal C2 domains that are seperated by long alternatively spliced sequences.
RIM 2β consists of a specific N-terminus, the central PDZ domain and the C-terminal C2 domains. The mRNA for RIM 2β is transcribed from an internal promoter of the RIM 2α gene.
Shorter variants of RIM 2 which comprise only the C-terminal C_2B domain and some flanking regions are referred to as NIM 2 / RIM 2γ and NIM 3 / RIM 3γ.

Selected References for 140 303

RIM1/2-Mediated Facilitation of Cav1.4 Channel Opening Is Required for Ca2+-Stimulated Release in Mouse Rod Photoreceptors.
Grabner CP, Gandini MA, Rehak R, Le Y, Zamponi GW, Schmitz F
The Journal of neuroscience : the official journal of the Society for Neuroscience (2015) 3538: 13133-47. . **IHC, WB**

Analysis of RIM Expression and Function at Mouse Photoreceptor Ribbon Synapses.
Löhner M, Babai N, Müller T, Gierke K, Atorf J, Joachimsthaler A, Peukert A, Martens H, Feigenspan A, Kremers J, Schoch S, et al.
The Journal of neuroscience : the official journal of the Society for Neuroscience (2017) 3733: 7848-7863. . **WB, IHC; tested species: mouse**

Loss of Function of RIMS2 Causes a Syndromic Congenital Cone-Rod Synaptic Disease with Neurodevelopmental and Pancreatic Involvement.
Mechaussier S, Almoallem B, Zeitz C, Van Schil K, Jeddawi L, Van Dorpe J, Dueñas Rey A, Condroyer C, Pelle O, Polak M, Boddaert N, et al.
American journal of human genetics (2020) : . . **WB; tested species: human**

Postsynaptic RIM1 modulates synaptic function by facilitating membrane delivery of recycling NMDARs in hippocampal neurons.
Wang J, Lv X, Wu Y, Xu T, Jiao M, Yang R, Li X, Chen M, Yan Y, Chen C, Dong W, et al.
Nature communications (2018) 91: 2267. . **WB; tested species: mouse**

Deletion of the presynaptic scaffold CAST reduces active zone size in rod photoreceptors and impairs visual processing.
tom Dieck S, Specht D, Strenzke N, Hida Y, Krishnamoorthy V, Schmidt KF, Inoue E, Ishizaki H, Tanaka-Okamoto M, Miyoshi J, Hagiwara A, et al.
The Journal of neuroscience : the official journal of the Society for Neuroscience (2012) 3235: 12192-203. . **IHC; tested species: mouse**

Stability of active zone components at the photoreceptor ribbon complex.
Regus-Leidig H, Specht D, Tom Dieck S, Brandstätter JH
Molecular vision (2010) 16: 2690-700. . **IHC**

Selected General References

Genomic definition of RIM proteins: evolutionary amplification of a family of synaptic regulatory proteins.
Wang Y et al. Genomics (2003) PubMed:12620390

The RIM/NIM family of neuronal C2 domain proteins. Interactions with Rab3 and a new class of Src homology 3 domain proteins.
Wang Y et al. J. Biol. Chem. (2000) PubMed:10748113

Access the online factsheet including applicable protocols at https://sysy.com/product/140303 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.