SYSY Antibodies

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Rab-GDI1

Cat.No. 130 011; Monoclonal mouse antibody, 100 µg purified IgG (lyophilized)

Data Sheet

Reconstitution/ Storage	100 µg purified IgG, lyophilized. Albumin and azide were added for stabilization. For **reconstitution** add 100 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 up to 1 : 10000 (AP staining) **IP**: yes (see remarks) **ICC**: not tested yet **IHC**: not recommended **IHC-P (FFPE)**: not tested yet
Clone	81.2
Subtype	IgG1 (κ light chain)
Immunogen	Recombinant protein corresponding to AA 1 to 447 from bovine Rab-GDI1 (UniProt Id: P21856)
Reactivity	Reacts with: human (P31150), rat (P50398), mouse (P50396), hamster, cow. Other species not tested yet.
Specificity	Recognizes Rab-GDI-α and -β.
Remarks	**IP**: Immunoprecipitates Rab-GDI complexes.

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

Background

Rab-GDI forms complexes exclusively with the GDP-form of rab proteins. Complex formation shields the geranylgeranyl moieties of rabs and leads to their dissociation from the membrane.
There are several isoforms of rab-GDI which nondiscriminately interact with all rab proteins including rab 3 and rab 5 but not with other small GTPases such as members of the rho or ras families. GDI-α is predominantly expressed in brain whereas other isoforms are more generally distributed.

Selected References for 130 011

Quantitative analysis of synaptic vesicle Rabs uncovers distinct yet overlapping roles for Rab3a and Rab27b in Ca2+-triggered exocytosis.
Pavlos NJ, Grønborg M, Riedel D, Chua JJ, Boyken J, Kloepper TH, Urlaub H, Rizzoli SO, Jahn R
The Journal of neuroscience : the official journal of the Society for Neuroscience (2010) 3040: 13441-53. . **WB, IP**

Proteomics of photoreceptor outer segments identifies a subset of SNARE and Rab proteins implicated in membrane vesicle trafficking and fusion.
Kwok MC, Holopainen JM, Molday LL, Foster LJ, Molday RS
Molecular & cellular proteomics : MCP (2008) 76: 1053-66. . **IHC**

Functional specificity of liquid-liquid phase separation at the synapse.
Guzikowski NJ, Kavalali ET
Nature communications (2024) 151: 10103. . **WB; tested species: rat**

Persistence of quantal synaptic vesicle recycling in virtual absence of dynamins.
Afuwape OAT, Chanaday NL, Kasap M, Monteggia LM, Kavalali ET
The Journal of physiology (2024) : . . **WB; tested species: mouse**

Interneuronal exchange and functional integration of synaptobrevin via extracellular vesicles.
Vilcaes AA, Chanaday NL, Kavalali ET
Neuron (2021) 1096: 971-983.e5. . **WB; tested species: mouse**

Synaptic neurexin-1 assembles into dynamically regulated active zone nanoclusters.
Trotter JH, Hao J, Maxeiner S, Tsetsenis T, Liu Z, Zhuang X, Südhof TC
The Journal of cell biology (2019) : . . **WB; tested species: mouse**

Polarity Acquisition in Cortical Neurons Is Driven by Synergistic Action of Sox9-Regulated Wwp1 and Wwp2 E3 Ubiquitin Ligases and Intronic miR-140.
Ambrozkiewicz MC, Schwark M, Kishimoto-Suga M, Borisova E, Hori K, Salazar-Lázaro A, Rusanova A, Altas B, Piepkorn L, Bessa P, Schaub T, et al.
Neuron (2018) : . . **WB; tested species: mouse**

ApoE2, ApoE3, and ApoE4 Differentially Stimulate APP Transcription and Aβ Secretion.
Huang YA, Zhou B, Wernig M, Südhof TC
Cell (2017) 1683: 427-441.e21. . **WB; tested species: mouse**

Loss of Doc2-Dependent Spontaneous Neurotransmission Augments Glutamatergic Synaptic Strength.
Ramirez DMO, Crawford DC, Chanaday NL, Trauterman B, Monteggia LM, Kavalali ET
The Journal of neuroscience : the official journal of the Society for Neuroscience (2017) 3726: 6224-6230. . **WB; tested species: rat**

Selective molecular impairment of spontaneous neurotransmission modulates synaptic efficacy.
Crawford DC, Ramirez DM, Trauterman B, Monteggia LM, Kavalali ET
Nature communications (2017) 8: 14436. . **WB**

Conditional deletion of L1CAM in human neurons impairs both axonal and dendritic arborization and action potential generation.
Patzke C, Acuna C, Giam LR, Wernig M, Südhof TC
The Journal of experimental medicine (2016) 2134: 499-515. . **WB; tested species: mouse**

Access the online factsheet including applicable protocols at https://sysy.com/product/130011 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.