SYSY Antibodies

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Rab27

Cat.No. 168 003; Polyclonal rabbit antibody, 50 µg specific antibody (lyophilized)

Data Sheet

Reconstitution/ Storage	50 µg specific antibody, lyophilized. Affinity purified with the immunogen. Albumin was 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**: not tested yet **IHC-P (FFPE)**: not tested yet
Immunogen	Recombinant protein corresponding to AA 1 to 221 from rat Rab27A (UniProt Id: P23640)
Reactivity	Reacts with: rat (P23640, Q99P74), mouse (Q9ERI2, Q99P58). Other species not tested yet.
Specificity	Recognizes both isoforms rab 27A and B; no cross reaction to other rab proteins.
Matching control	168-0P

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

Background

Rab 27 proteins are members of the Rab protein family that belongs to the ras-related superfamily of small monomeric GTPases. These proteins are involved in intracellular fusion reactions of vesicles or organelles with their target membranes. Two Rab 27 isoforms, Rab **27A** and **27B**, have been described so far.
Mutations in the Rab 27A gene have been shown to be responsible for the Griscelli syndrome characterized by pigment dilution of the hair and an uncontrolled T-lymphocyte and macrophage activation. This disorder is probably due to the dysfunction of melanosomes in melanocytes and lytic granules in CTLs. Additionally Rab 27A is located on mature insulin granules of pancreatic β-cells and is expressed in the pigment epithelium and choriocapillaris of the retina.
In patients who suffer from Griscelli syndrome because of missense mutations in the Rab 27A gene, Rab 27B is upregulated and partially compensates for Rab 27A dysfunction. Rab 27B also regulates amylase secretion in parotid acinar cells.
Recently it has been shown that Rab 27 is also involved in synaptic transmission in C. elegans.

Selected References for 168 003

Phosphorylation negatively regulates exosome mediated secretion of cryAB in glioma cells.
Kore RA, Abraham EC
Biochimica et biophysica acta (2016) 18632: 368-77. . **ICC**

Synaptotagmin-1 docks secretory vesicles to syntaxin-1/SNAP-25 acceptor complexes.
de Wit H, Walter AM, Milosevic I, Gulyás-Kovács A, Riedel D, Sørensen JB, Verhage M
Cell (2009) 1385: 935-46. . **WB**

UNC93B1 interacts with the calcium sensor STIM1 for efficient antigen cross-presentation in dendritic cells.
Maschalidi S, Nunes-Hasler P, Nascimento CR, Sallent I, Lannoy V, Garfa-Traore M, Cagnard N, Sepulveda FE, Vargas P, Lennon-Duménil AM, van Endert P, et al.
Nature communications (2017) 81: 1640. . **WB; tested species: mouse**

Selected General References

Regulation of synaptic transmission by RAB-3 and RAB-27 in Caenorhabditis elegans.
Mahoney TR et al. Mol. Biol. Cell (2006) PubMed:16571673

Rab7 and Rab27a control two motor protein activities involved in melanosomal transport.
Jordens I et al. Pigment Cell Res. (2006) PubMed:16965270

Rab3A and Rab27A cooperatively regulate the docking step of dense-core vesicle exocytosis in PC12 cells.
Tsuboi T et al. J. Cell. Sci. (2006) PubMed:16684812

Functional analysis of Rab27a effector granuphilin in insulin exocytosis.
Izumi T et al. Meth. Enzymol. (2005) PubMed:16473589

Rab27a mediates the tight docking of insulin granules onto the plasma membrane during glucose stimulation.
Kasai K et al. J. Clin. Invest. (2005) PubMed:15690086

Rab27a: a new face in beta cell metabolism-secretion coupling.
Aizawa T et al. J. Clin. Invest. (2005) PubMed:15690078

A general role for Rab27a in secretory cells.
Tolmachova T et al. Mol. Biol. Cell (2004) PubMed:14617806

The role of Rab27a in the regulation of melanosome distribution within retinal pigment epithelial cells.
Futter CE et al. Mol. Biol. Cell (2004) PubMed:14978221

Access the online factsheet including applicable protocols at https://sysy.com/product/168003 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.