

## 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 <b>reconstitution</b> add 50 µl H <sub>2</sub> O 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	<b>WB:</b> 1 : 1000 (AP staining) <b>IP:</b> yes <b>ICC:</b> not tested yet <b>IHC:</b> not tested yet <b>IHC_P:</b> 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 Enderst 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, Liu Q, Itoh T, Luo S, Hadwiger G, Vincent R, Wang ZW, Fukuda M, Nonet ML  
*Molecular biology of the cell* (2006) 176: 2617-25. .

Rab7 and Rab27a control two motor protein activities involved in melanosomal transport.  
Jordens I, Westbroek W, Marsman M, Rocha N, Mommaas M, Huizing M, Lambert J, Naeyaert JM, Neeffjes J  
*Pigment cell research* (2006) 195: 412-23. .

Rab3A and Rab27A cooperatively regulate the docking step of dense-core vesicle exocytosis in PC12 cells.  
Tsuboi T, Fukuda M  
*Journal of cell science* (2006) 119Pt 11: 2196-203. .

Functional analysis of Rab27a effector granuphilin in insulin exocytosis.  
Izumi T, Gomi H, Torii S  
*Methods in enzymology* (2005) 403: 216-29. .

Rab27a mediates the tight docking of insulin granules onto the plasma membrane during glucose stimulation.  
Kasai K, Ohara-Imaizumi M, Takahashi N, Mizutani S, Zhao S, Kikuta T, Kasai H, Nagamatsu S, Gomi H, Izumi T  
*The Journal of clinical investigation* (2005) 1152: 388-96. .

Rab27a: a new face in beta cell metabolism-secretion coupling.  
Aizawa T, Komatsu M  
*The Journal of clinical investigation* (2005) 1152: 227-30. .

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 our antibodies and control proteins / peptides are shipped lyophilized (vacuum freeze-dried) and are stable in this form 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. **They must not be stored in the freezer when still lyophilized!** Temperatures below zero may cause loss of performance.
- **Fluorescence-labeled antibodies** should be reconstituted immediately upon receipt. Long term storage (several months) may lead to aggregation.
- **Control peptides** should be kept at -20°C before reconstitution.

## Long Term Storage after Reconstitution (General Considerations)

- The storage freezer must not be of the frost-free variety ("no-frost freezer"). This cycle between freezing and thawing (to reduce frost-build-up), which is exactly what should be avoided. For the same reason, antibody vials should be placed in an area of the freezer that has minimal temperature fluctuations, for instance towards the back rather than on a door shelf.
- Aliquot the antibody and store frozen (-20°C to -80°C). Avoid very small aliquots (below 20 µl) and use the smallest storage vial or tube possible. The smaller the aliquot, the more the stock concentration is affected by evaporation and adsorption of the antibody to the surface of the storage vial or tube. Adsorption of the antibody to the surface leads to a substantial loss of activity.
- The addition of glycerol to a final concentration of 50% lowers the freezing point of your stock and keeps your antibody at -20°C in liquid state. This efficiently avoids freeze and thaw cycles.

## Product Specific Hints for Storage

### Control proteins / peptides

- Store at -20°C to -80°C.

### Monoclonal Antibodies

- **Ascites** and **hybridoma supernatant** should be stored at -20°C up to -80°C. **Prolonged storage at 4°C is not recommended!** Unlike serum, ascites may contain proteases that will degrade the antibodies.
- **Purified IgG** should be stored at -20°C up to -80°C. Adding a carrier protein like BSA will increase long term stability. Many of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

### Polyclonal Antibodies

- **Crude antisera:** With anti-microbials added, they may be stored at 4°C. However, frozen storage (-20°C up to -80°C) is preferable.
- **Affinity purified antibodies:** Less robust than antisera. Storage at -20°C up to -80°C is recommended. Adding a carrier protein like BSA will increase long term stability. Most of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

### Fluorescence-labeled Antibodies

- Store as a liquid with 1 : 1 (v/v) glycerol at -20°C. Protect these antibodies from light exposure.

# Avoid repeated freeze-thaw cycles for all antibodies!

## FAQ - How should I reconstitute my antibody?

### Reconstitution

- All our purified antibodies are lyophilized from PBS. To reconstitute the antibody in PBS, add the amount of deionized water given in the respective datasheet. If higher volumes are preferred, add water as mentioned above and then the desired amount of PBS and a stabilizing carrier protein (e.g. BSA) to a final concentration of 2%. Some of our antibodies already contain albumin. Take this into account when adding more carrier protein. For complete reconstitution, carefully remove the lid. After adding water, briefly vortex the solution. You can spin down the liquid by placing the vial into a 50 ml centrifugation tube filled with paper.
- If desired, add small amounts of azide or thimerosal to prevent microbial growth. This is especially recommended if you want to keep an aliquot a 4°C.
- After reconstitution of fluorescence-labeled antibodies, add 1 : 1 (v/v) glycerol to a final concentration of 50%. This lowers the freezing point of your stock and keeps your antibody in liquid state at -20°C.
- Glycerol may also be added to unlabeled primary antibodies. It is a suitable way to avoid freeze-thaw cycles.
- Please refer to our **tips and hints for subsequent storage** of reconstituted antibodies and control peptides and proteins.