

Rab 27 B

Cat.No. 168 103; Polyclonal rabbit antibody, 50 µg specific antibody (lyophilized)

Data Sheet

Reconstitution/ Storage	50 µg specific antibody, lyophilized. Affinity purified with the immunogen. Rabbit serum albumin was added for stabilization. For reconstitution add 50 µl H ₂ O to get a 1mg/ml solution in PBS. Then aliquot and store at -20°C until use.
Applications	WB: 1 : 1000 (AP staining) IP: yes ICC: 1 : 500 IHC: 1 : 400 IHC-P/FFPE: 1 : 200
Immunogen	Recombinant protein corresponding to AA 1 to 217 from rat Rab27B (UniProt Id: Q99P74)
Reactivity	Reacts with: rat (Q99P74), mouse (Q99P58), human (O00194). Other species not tested yet.
Specificity	Specific for rab 27B with weak cross reaction to rab 27A. (K.O. verified)
matching control	168-1P

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

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 SYSY Antibodies

Quantitative analysis of synaptic vesicle Rabs uncovers distinct yet overlapping roles for Rab3a and Rab27b in Ca²⁺-triggered exocytosis.

Pavlos NJ, Grønberg M, Riedel D, Chua JJ, Boyken J, Kloeppe TH, Urlaub H, Rizzoli SO, Jahn R
The Journal of neuroscience : the official journal of the Society for Neuroscience (2010) 30(40): 13441-53. **WB, ICC**

Rab27A Is Present in Mouse Pancreatic Acinar Cells and Is Required for Digestive Enzyme Secretion.

Hou Y, Ernst SA, Stuenkel EL, Lentz SI, Williams JA
PloS one (2015) 10(5): e0125596. **WB, IHC**

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Yoon S, Kovalenko A, Bogdanov K, Wallach D
Immunity (2017) 47(1): 51-65.e7. **WB; KD verified; tested species: human**

Genetic deletion of Rab27B in pancreatic acinar cells affects granules size and has inhibitory effects on amylase secretion.

Hou Y, Ernst SA, Lentz SI, Williams JA
Biochemical and biophysical research communications (2016) 471(4): 610-5. **WB; KO verified**

Rab27b is Involved in Lysosomal Exocytosis and Proteolipid Protein Trafficking in Oligodendrocytes.

Shen YT, Gu Y, Su WF, Zhong JF, Jin ZH, Gu XS, Chen G
Neuroscience bulletin (2016) 32(4): 331-40. **ICC**

EPI64B acts as a GTPase-activating protein for Rab27B in pancreatic acinar cells.

Hou Y, Chen X, Tolmachova T, Ernst SA, Williams JA
The Journal of biological chemistry (2013) 288(27): 19548-57. **WB**

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) 17(6): 2617-25.

Rab7 and Rab27a control two motor protein activities involved in melanosomal transport.

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Pigment cell research (2006) 19(5): 412-23.

Rab3A and Rab27A cooperatively regulate the docking step of dense-core vesicle exocytosis in PC12 cells.

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Journal of cell science (2006) 119(Pt 11): 2196-203.

Functional analysis of Rab27a effector granuphilin in insulin exocytosis.

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The Journal of clinical investigation (2005) 115(2): 388-96.

Rab27a: a new face in beta cell metabolism-secretion coupling.

Aizawa T, Komatsu M
The Journal of clinical investigation (2005) 115(2): 227-30.

A general role for Rab27a in secretory cells.

Tolmachova T, Anders R, Stinchcombe J, Bossi G, Griffiths GM, Huxley C, Seabra MC
Molecular biology of the cell (2004) 15(1): 332-44.

The role of Rab27a in the regulation of melanosome distribution within retinal pigment epithelial cells.

Futter CE, Ramalho JS, Jaissle GB, Seeliger MW, Seabra MC
Molecular biology of the cell (2004) 15(5): 2264-75.

Rab27A-binding protein Slp2-a is required for peripheral melanosome distribution and elongated cell shape in melanocytes.

Kuroda TS, Fukuda M
Nature cell biology (2004) 6(12): 1195-203.

The small GTPase Rab27B regulates amylase release from rat parotid acinar cells.

Imai A, Yoshie S, Nashida T, Shimomura H, Fukuda M
Journal of cell science (2004) 117(Pt 10): 1945-53.

Rab27b is up-regulated in human Griscelli syndrome type II melanocytes and linked to the actin cytoskeleton via exon F-Myosin Va transcripts.

Westbroek W, Lambert J, De Schepper S, Kleta R, Van Den Bossche K, Seabra MC, Huizing M, Mommaas M, Naeyaert JM
Pigment cell research (2004) 17(5): 498-505.