Synaptic Systems

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Rab 27 A

Cat.No. 168 013; 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_2O 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**: 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), mouse (Q9ERI2), human (P51159). Other species not tested yet.
Specificity	Specific for rab 27A. No cross reactivity to rab 27B. (K.O. verified)
matching control	168-0P
Remarks	Only the non-conserved C-terminal part of the protein was used for affinity purification to achieve specificity.

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

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; KO verified**

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) 8(1): 1640. **WB, DOTBLOT; tested species: mouse**

Kinesin-1: A New Actor Involved in Platelet Secretion and Thrombus Stability.
Adam F, Kauskot A, Kurowska M, Goudin N, Munoz I, Bordet JC, Huang JD, Bryckaert M, Fischer A, Borgel D, de Saint Basile G, et al.
Arteriosclerosis, thrombosis, and vascular biology (2018) : . **WB; tested species: mouse**

Genome-wide interrogation of extracellular vesicle biology using barcoded miRNAs.
Lu A, Wawro P, Morgens DW, Portela F, Bassik MC, Pfeffer SR
eLife (2018) 7: . **WB; KD verified; tested species: human**

MLKL, the Protein that Mediates Necroptosis, Also Regulates Endosomal Trafficking and Extracellular Vesicle Generation.
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**

Alterations in microRNA expression contribute to fatty acid-induced pancreatic beta-cell dysfunction.
Lovis P, Roggli E, Laybutt DR, Gattesco S, Yang JY, Widmann C, Abderrahmani A, Regazzi R
Diabetes (2008) 57(10): 2728-36. **WB**

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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, Neefjes J
Pigment cell research (2006) 19(5): 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) 119(Pt 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) 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.