

Rab, Synaptotagmin

Rab Antibodies

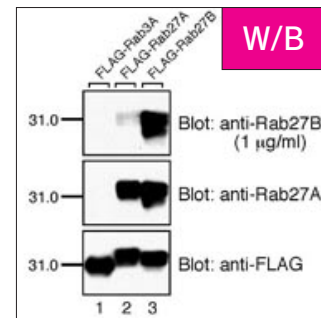
Product No.	Product Name		Volume	Application	Crossreactivity
18973	Anti-	Rab27B	Rabbit IgG Affinity purify	100 ug W/B 1-5 ug/mL	mouse and rat
18975	Anti-	Rab27A/B	Rabbit IgG Affinity purify	100 ug W/B 1-5 ug/mL	mouse and rat

Small GTPase Rab is a large family of membrane trafficking proteins that are conserved in all eukaryotic cells. More than 60 Rab isoforms have been reported in mice and humans, and they are believed to regulate various steps (or various types) of organelle transport.

The Rab27 subfamily is phylogenetically similar to the Rab3 subfamily, and two Rab27 isoforms, Rab27A and Rab27B, are present in mice and humans.

Mutations in the RAB27A gene cause human Griscelli syndrome, which is characterized by pigment dilution and immunodeficiency. The GTP-bound activated form of Rab27A regulates melanosome transport in melanocytes and secretory granule exocytosis (e.g., insulin secretion) through interaction with a specific effector molecule (e.g., Synaptotagmin-like protein (Slp) and Slac2).

Rab27B is also expressed on secretory granules, the same as Rab27A, and regulates their exocytosis (e.g., amylase release from rat parotid acinar cells)



Reference

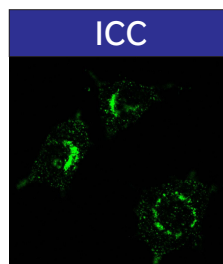
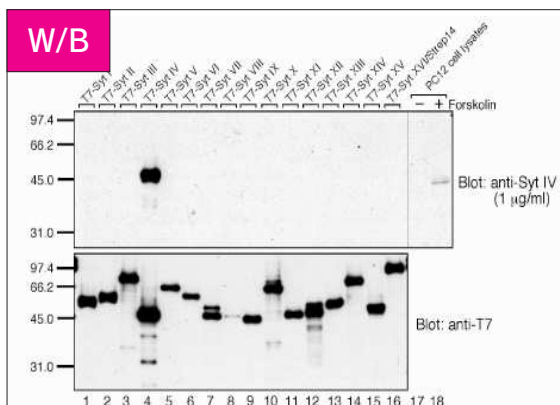
- Ménasché, G., Pastural, E., Feldmann, J., Certain, S., Ersoy, F., Dupuis, S., Wulffraat, N., Bianchi, D., Fischer, A., Le Deist, F., de Saint Basile, G. Mutations in RAB27A cause Griscelli syndrome associated with haemophagocytic syndrome. *Nat. Genet.* 25:173-176 (2000)
- Imai, A., Yoshie, S., Nashida, T., Shimomura, H., Fukuda, M. The small GTPase Rab27B regulates amylase release from rat parotid acinar cells. *J. Cell Sci.* 117:1945-1953 (2004)
- Fukuda, M. Versatile role of Rab27 in membrane trafficking: Focus on the Rab27 effector families. *J. Biochem.* 137:9-16 (2005)

Synaptotagmin Antibodies

Product No.	Product Name		Volume	Application	Crossreactivity
18977	Anti-	Synaptotagmin IV	Rabbit IgG Affinity purify	100 ug ICC 5 ug/mL W/B 5 ug/mL IP 5-10ug/mL	mouse and rat

Synaptotagmin family proteins consist of a single N-terminal transmembrane domain and C-terminal tandem C2 domains (C2A and C2B), which potentially bind Ca²⁺ and phospholipid. To date, 15 Synaptotagmin isoforms have been reported in mice and humans. The best-characterized isoform Synaptotagmin I is essential for synaptic vesicle exocytosis and endocytosis.

It is reported that i) Synaptotagmin IV expression is regulated by neural activity and thought to be involved in synaptic plasticity, ii) Synaptotagmin IV is present on dense-core vesicles in NGF-differentiated PC12 cells and may control their exocytosis, and iii) Synaptotagmin IV regulates glutamate release from astrocytes



Reference:

- Ibata, K., Fukuda, M., Hamada, T., Kabayama, H., Mikoshiba, K. Synaptotagmin IV is present at the Golgi and distal parts of neurites. *J. Neurochem.* 74:518-526 (2000)
- Fukuda, M., Kanno, E., Ogata, Y., Saegusa, C., Kim, T., Loh, P.Y., Yamamoto, A. Nerve growth factor-dependent sorting of synaptotagmin IV protein to mature dense-core vesicles that undergo calcium-dependent exocytosis in PC12 cells. *J. Biol. Chem.* 278:3220-3226 (2003)
- Zhang, Q., Fukuda, M., Van Bockstaele, E., Pascual, O., Haydon, P.G. Synaptotagmin IV regulates glial glutamate release. *Proc. Natl. Acad. Sci. USA* 101:9441-9446 (2004)

These antibodies have been developed with advice and contributions by Fukuda, M., PhD, Fukuda initiative research Unit, RIKEN, 2-1 Hirosawa, Wako, Saitama 351-019

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