

Rim1 (T-20): sc-16676

BACKGROUND

Rab3, a neural/neuroendocrine-specific member of the Rab family, is involved in Ca^{2+} -regulated exocytosis. Rab3 functions in an inhibitory capacity by controlling the recruitment of secretory vesicles into a releasable pool at the plasma membrane. Rim (rab3 interacting molecule), a putative effector protein for Rab3s, is composed of an amino-terminal zinc-finger motif and carboxy-terminal PDZ and C2 domains. Rim exists as two variants, Rim1 and Rim2, produced by alternative splicing. Rim1 is expressed near the active zone at the synapse, where it interacts in a GTP-dependent manner with Rab3, located on synaptic vesicles. Therefore, Rim serves as a Rab3-dependent regulator of synaptic-vesicle fusion by forming a GTP-dependent complex between synaptic plasma membranes and docked synaptic vesicles. Both Rim1 and Rim2 can bind to cAMP-GEFII, which is a direct target of cAMP in regulated exocytosis and is responsible for cAMP-dependent, PKA-dependent exocytosis. Rim also localizes on the plasma membrane of INS-1E cells and pancreatic β -cells. Rab3 binding domain of Rim enhances glucose-stimulated secretion in intact cells and Ca^{2+} -stimulated exocytosis in permeabilized cells, suggesting that Rim may also play a regulatory role in Insulin secretion.

REFERENCES

1. Wang, Y., et al. 1997. Rim is a putative Rab3 effector in regulating synaptic-vesicle fusion. *Nature* 388: 593-598.
2. Coppola, T., et al. 1999. Disruption of Rab3-calmodulin interaction, but not other effector interactions, prevents Rab3 inhibition of exocytosis. *EMBO J.* 18: 5885-5891.
3. Ozaki, N., et al. 2000. cAMP-GEFII is a target of cAMP in regulated exocytosis. *Nat. Cell Biol.* 2: 805-811.
4. Wang, Y., et al. 2000. The RIM/NIM family of neuronal C2 domain proteins. Interactions with Rab3 and a new class of Src homology 3 domain proteins. *J. Biol. Chem.* 275: 20043-20044.
5. Izzi, M., et al. 2000. The Rab3-interacting molecule RIM is expressed in pancreatic β -cells and is implicated in Insulin exocytosis. *FEBS Lett.* 474: 66-70.
6. Haynes, L.P., et al. 2001. A direct inhibitory role for the Rab3-specific effector, Noc2, in Ca^{2+} -regulated exocytosis in neuroendocrine cells. *J. Biol. Chem.* 27: 9726-9732.

CHROMOSOMAL LOCATION

Genetic locus: RIMS1 (human) mapping to 6q13; Rims1 (mouse) mapping to 1 A4.

SOURCE

Rim1 (T-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Rim1 of human origin.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-16676 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Rim1 (T-20) is recommended for detection of Rim1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

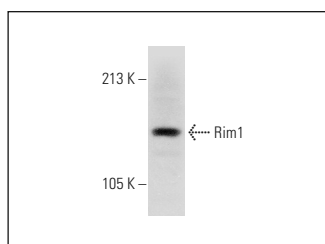
Suitable for use as control antibody for Rim1 siRNA (h): sc-44079, Rim1 siRNA (m): sc-152964, Rim1 shRNA Plasmid (h): sc-44079-SH, Rim1 shRNA Plasmid (m): sc-152964-SH, Rim1 shRNA (h) Lentiviral Particles: sc-44079-V and Rim1 shRNA (m) Lentiviral Particles: sc-152964-V.

Positive Controls: Jurkat whole cell lysate: sc-2204.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



Rim1 (T-20): sc-16676. Western blot analysis of Rim1 expression in Jurkat whole cell lysate.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.