SANTA CRUZ BIOTECHNOLOGY, INC.

Rim1/2 (B-4): sc-515918

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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. 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.

CHROMOSOMAL LOCATION

Genetic locus: RIMS1 (human) mapping to 6q13, RIMS2 (human) mapping to 8q22.3; Rims1 (mouse) mapping to 1 A4, Rims2 (mouse) mapping to 15 B3.1.

SOURCE

Rim1/2 (B-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 27-54 near the N-terminus of Rim1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Rim1/2 (B-4) is available conjugated to agarose (sc-515918 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-515918 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515918 PE), fluorescein (sc-515918 FITC), Alexa Fluor® 488 (sc-515918 AF488), Alexa Fluor® 546 (sc-515918 AF546), Alexa Fluor® 594 (sc-515918 AF594) or Alexa Fluor® 647 (sc-515918 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-515918 AF680) or Alexa Fluor® 790 (sc-515918 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Rim1/2 (B-4) is recommended for detection of Rim1 and Rim2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

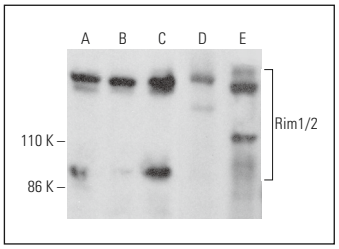
Molecular Weight of Rim1/2: 160 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, HeLa whole cell lysate: sc-2200 or Y79 cell lysate: sc-2240.

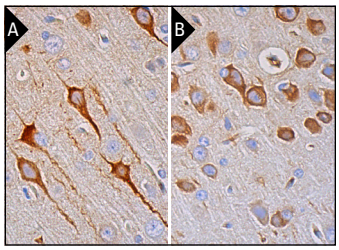
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



Rim1/2 (B-4): sc-515918. Western blot analysis of Rim1/2 expression in Jurkat (**A**), HeLa (**B**) and Y79 (**C**) whole cell lysates and human placenta (**D**) and mouse brain (**E**) tissue extracts.



Rim1/2 (B-4): sc-515918. Immunoperoxidase staining of formalin fixed, paraffin-embedded rat brain tissue showing cytoplasmic staining of neuronal cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded mouse brain tissue showing cytoplasmic staining of neuronal cells and endothelial cells (**B**).

STORAGE

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

RESEARCH USE

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

PROTOCOLS

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