SANTA CRUZ BIOTECHNOLOGY, INC.

rabphilin-3A (E-3): sc-398621

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The carboxy-terminal of rabphilin-3A consists of two C2 domains, A and B, and the amino-terminal (residues 45-170) contains a cysteine-rich rich region with two zinc finger motifs. Rabphilin-3A belongs to a family of other carboxy-terminal type (C-type) tandem C2 proteins, which includes synaptotagmins and Doc2. Rabphilin is expressed in neuroendocrine cells and co-localizes with Rab3A on synaptic vesicles and chromaffin granules. Rabphilin-3A binds Rab3a/GTP/Mg^{+} within amino-terminal residues 45 and 170. Rabphilin-3A binds calcium ions and phosphatidylinositol 4,5-bi-sphophate containing lipid vesicles within its C2 domains. Rabphilin-3A is a positive regulator of calcium dependent exocytosis, while Rab3a is a negative regulator of exocytosis. Although rabphilin-3A associates with Rab3a, they seem to influence exocytosis independently of each other. Rabphilin-3A effects are likely mediated through interactions with an unknown factor that recognizes the Rab3 binding domain.

REFERENCES

1. Chung, S.H., et al. 1998. The C2 domains of rabphilin-3A specifically bind phosphatidylinositol 4,5-bisphosphate containing vesicles in a Ca^{2+}-dependent manner. J. Biol. Chem. 273: 10240-10248.
2. Chung, S.H., et al. 1999. Comparison of the effects on secretion in chromaffin and PC12 cells of Rab3 family members and mutants. Evidence that inhibitory effects are independent of direct interaction with rabphilin-3. J. Biol. Chem. 274: 18113-18120.
3. Ubach, J., et al. 1999. Structure of the Janus-faced C2B domain of rabphilin. Nat. Cell Biol. 1: 106-112.
4. Joberty, G., et al. 1999. High affinity Rab3 binding is dispensable for rabphilin-dependent potentiation of stimulated secretion. J. Cell Sci. 112: 3579-3587.
5. Fukuda, M. and Mikoshiba, K. 2001. Synaptogmin-like protein 1-3: a novel family of C-terminal-type tandem C2 proteins. Biochem. Biophys. Res. Commun. 281: 1226-1233.

CHROMOSOMAL LOCATION

Genetic locus: RPH3A (human) mapping to 12q24.13; Rph3a (mouse) mapping to 5 F.

SOURCE

rabphilin-3A (E-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 499-533 within an internal region of rabphilin-3A of mouse origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-398621 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

rabphilin-3A (E-3) is recommended for detection of rabphilin-3A 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for rabphilin-3A siRNA (h): sc-106476, rabphilin-3A siRNA (m): sc-152671, rabphilin-3A shRNA Plasmid (h): sc-106476-SH, rabphilin-3A shRNA Plasmid (m): sc-152671-SH, rabphilin-3A shRNA (h) Lentiviral Particles: sc-106476-V and rabphilin-3A shRNA (m) Lentiviral Particles: sc-152671-V.

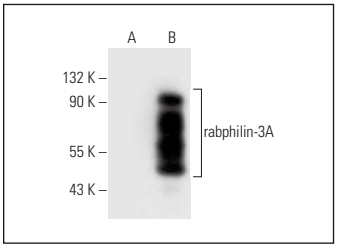
Molecular Weight of rabphilin-3A: 77 kDa.

Positive Controls: rabphilin-3A (m): 293T Lysate: sc-122930.

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 L-Agarose: sc-2336 (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.

DATA



rabphilin-3A (E-3): sc-398621. Western blot analysis of rabphilin-3A expression in non-transfected: sc-117752 (**A**) and mouse rabphilin-3A transfected: sc-122930 (**B**) 293T whole cell lysates.

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.