

rabphilin-3A (D-6): sc-393197

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 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/Mg²⁺ within amino-terminal residues 45 and 170. Rabphilin-3A binds calcium ions and phosphatidylinositol 4,5-bisphosphate 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 Ca²⁺-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.

CHROMOSOMAL LOCATION

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

SOURCE

rabphilin-3A (D-6) is a mouse monoclonal antibody raised against amino acids 516-576 mapping within an internal region of rabphilin-3A of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

rabphilin-3A (D-6) is available conjugated to agarose (sc-393197 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-393197 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393197 PE), fluorescein (sc-393197 FITC), Alexa Fluor® 488 (sc-393197 AF488), Alexa Fluor® 546 (sc-393197 AF546), Alexa Fluor® 594 (sc-393197 AF594) or Alexa Fluor® 647 (sc-393197 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-393197 AF680) or Alexa Fluor® 790 (sc-393197 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

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

APPLICATIONS

rabphilin-3A (D-6) 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.

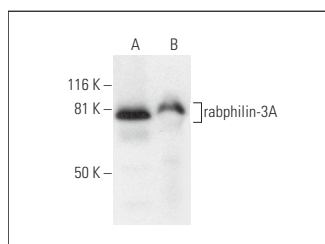
Molecular Weight of rabphilin-3A: 77 kDa.

Positive Controls: rat brain extract: sc-2392 or human hippocampus tissue extract.

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.

DATA



rabphilin-3A (D-6): sc-393197. Western blot analysis of rabphilin-3A expression in rat brain (A) and human hippocampus (B) tissue extracts.

SELECT PRODUCT CITATIONS

1. Wang, C., et al. 2020. Different regions of synaptic vesicle membrane regulate VAMP2 conformation for the SNARE assembly. *Nat. Commun.* 11: 1531.

STORAGE

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

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