SANTA CRUZ BIOTECHNOLOGY, INC.

Rab 3 GAP p130 (G-5): sc-393745

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The Power to Question

BACKGROUND

Rab3 proteins are involved in regulated exocytosis of neurotransmitters and hormones. Rab 3 GAP p130, also known as Rab3 GTPase-activating protein catalytic subunit, is a 981 amino acid protein that belongs to the Rab3-GAP catalytic subunit family. Rab 3 GAP p130 converts active RAB3-GTP to the inactive form RAB3-GDP, and is required for normal eye and brain development. Defects in Rab 3 GAP p130 are the cause of Warburg micro syndrome 1 (WARBM1). WARBM1 is a severe autosomal recessive disorder characterized by developmental abnormalities of the eye and central nervous system and by microgenitalia. The Rab 3 GAP p130 protein may participate in neurodevelopmental processes such as proliferation, migration and differentiation before synapse formation, and non-synaptic vesicular release of neurotransmitters. Existing as two alternatively spliced isoforms, the Rab 3 GAP p130 gene is conserved in chimpanzee, canine, bovine, mouse, chicken, zebrafish and fruit fly, and maps to human chromosome 2q21.3.

REFERENCES

1. Fukui, K., et al. 1997. Isolation and characterization of a GTPase activating protein specific for the Rab3 subfamily of small G proteins. J. Biol. Chem. 272: 4655-4658.
2. Oishi, H., et al. 1998. Localization of the Rab3 small G protein regulators in nerve terminals and their involvement in Ca^{2+}-dependent exocytosis. J. Biol. Chem. 273: 34580-34585.
3. Online Mendelian Inheritance in Man, OMIM™. 1998. Johns Hopkins University, Baltimore, MD. MIM Number: 602536. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Clabecq, A., et al. 2000. Biochemical characterization of Rab3-GTPase-activating protein reveals a mechanism similar to that of Ras-GAP. J. Biol. Chem. 275: 31786-31791.
5. Aligianis, I.A., et al. 2005. Mutations of the catalytic subunit of RAB3GAP cause Warburg Micro syndrome. Nat. Genet. 37: 221-223.
6. Sakane, A., et al. 2006. Rab3 GTPase-activating protein regulates synaptic transmission and plasticity through the inactivation of Rab3. Proc. Natl. Acad. Sci. USA 103: 10029-10034.

CHROMOSOMAL LOCATION

Genetic locus: RAB3GAP1 (human) mapping to 2q21.3.

SOURCE

Rab 3 GAP p130 (G-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 917-924 near the C-terminus of Rab 3 GAP p130 of human origin.

PRODUCT

Each vial contains 200 µg IgG_3 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-393745 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

Rab 3 GAP p130 (G-5) is recommended for detection of Rab 3 GAP p130 of 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 Rab 3 GAP p130 siRNA (h): sc-94704, Rab 3 GAP p130 shRNA Plasmid (h): sc-94704-SH and Rab 3 GAP p130 shRNA (h) Lentiviral Particles: sc-94704-V.

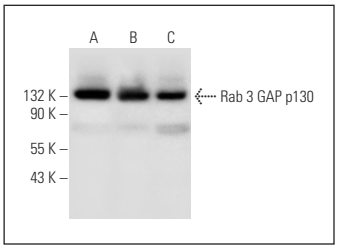
Molecular Weight of Rab 3 GAP p130 isoforms: 111/8 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, K-562 nuclear extract: sc-2130 or IMR-32 cell lysate: sc-2409.

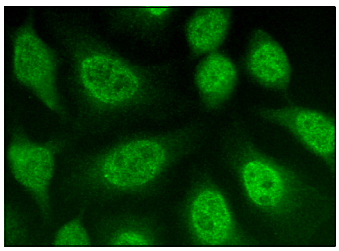
RECOMMENDED SUPPORT REAGENTS

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



Rab 3 GAP p130 (G-5): sc-393745. Western blot analysis of Rab 3 GAP p130 expression in K-562 whole cell lysate (**A**) and K-562 (**B**) and IMR-32 (**C**) nuclear extracts.



Rab 3 GAP p130 (G-5): sc-393745. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization.

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.