SANTA CRUZ BIOTECHNOLOGY, INC.

RasGRP3 (B-1): sc-376745

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The Power to Question

BACKGROUND

Members of the Ras subfamily of GTPases function in signal transduction as GTP/GDP-modulated switches that rotate between inactive GDP- and active GTP-bound states. Guanine nucleotide exchange factors (GEFs), such as RasGRP3 (GRP3), act as Ras activators by promoting retrieval of GTP to maintain the active GTP-bound state and are the fundamental link between cell surface receptors and Ras activation. Highest levels of RasGRP3 expression are observed in heart, brain, lung and kidney tissues, and intermediate expression is observed in liver, skeletal muscle, pancreas, spleen, testis and ovary tissues. RasGRP3, which shares significant sequence identity with the calcium- and diacylglycerol-activated GEFs, activates Ras and Rap 1 and promotes activation of ELK1 in prostate cancer cell lines.

REFERENCES

1. Nagase, T., et al. 1998. Prediction of the coding sequences of unidentified human genes. XII. The complete sequences of 100 new cDNA clones from brain which code for large proteins *in vitro*. DNA Res. 5: 355-364.
2. Rebhun, J.F., et al. 2000. Identification of guanine nucleotide exchange factors (GEFs) for the Rap 1 GTPase. Regulation of MR-GEF by M-Ras-GTP interaction. J. Biol. Chem. 275: 34901-34908.
3. Aiba, Y., et al. 2004. Activation of RasGRP3 by phosphorylation of Thr 133 is required for B cell receptor-mediated Ras activation. Proc. Natl. Acad. Sci. USA 101: 16612-16617.
4. Roberts, D.M., et al. 2004. A vascular gene trap screen defines RasGRP3 as an angiogenesis-regulated gene required for the endothelial response to phorbol esters. Mol. Cell. Biol. 24: 10515-10528.
5. Braun, D.C., et al. 2005. Role of phorbol ester localization in determining protein kinase C or RasGRP3 translocation: real-time analysis using fluorescent ligands and proteins. Mol. Cancer Ther. 4: 141-150.
6. Coughlin, J.J., et al. 2005. RasGRP1 and RasGRP3 regulate B cell proliferation by facilitating B cell receptor-Ras signaling. J. Immunol. 175: 7179-7184.
7. Ozaki, N., et al. 2005. RasGRP3 mediates phorbol ester-induced, protein kinase C-independent exocytosis. Biochem. Biophys. Res. Commun. 329: 765-771.
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CHROMOSOMAL LOCATION

Genetic locus: RASGRP3 (human) mapping to 2p22.3; Rasgrp3 (mouse) mapping to 17 E2.

SOURCE

RasGRP3 (B-1) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 553-589 near the C-terminus of RasGRP3 of human origin.

RESEARCH USE

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

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-376745 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

RasGRP3 (B-1) is recommended for detection of RasGRP3 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 RasGRP3 siRNA (h): sc-61444, RasGRP3 siRNA (m): sc-61445, RasGRP3 shRNA Plasmid (h): sc-61444-SH, RasGRP3 shRNA Plasmid (m): sc-61445-SH, RasGRP3 shRNA (h) Lentiviral Particles: sc-61444-V and RasGRP3 shRNA (m) Lentiviral Particles: sc-61445-V.

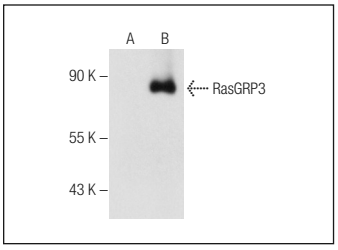
Molecular Weight of RasGRP3: 80 kDa.

Positive Controls: RasGRP3 (h): 293T Lysate: sc-114055, IB4 whole cell lysate: sc-364780 or Ramos cell lysate: sc-2216.

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



RasGRP3 (B-1): sc-376745. Western blot analysis of RasGRP3 expression in non-transfected: sc-117752 (**A**) and human RasGRP3 transfected: sc-114055 (**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.