

# RasGRP3 (H-1): sc-271068

## 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.

## CHROMOSOMAL LOCATION

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

## SOURCE

RasGRP3 (H-1) is a mouse monoclonal antibody raised against amino acids 1-69 mapping at the N-terminus of RasGRP3 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RasGRP3 (H-1) is available conjugated to agarose (sc-271068 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271068 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271068 PE), fluorescein (sc-271068 FITC), Alexa Fluor<sup>®</sup> 488 (sc-271068 AF488), Alexa Fluor<sup>®</sup> 546 (sc-271068 AF546), Alexa Fluor<sup>®</sup> 594 (sc-271068 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-271068 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-271068 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-271068 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

## STORAGE

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

## APPLICATIONS

RasGRP3 (H-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), 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).

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.

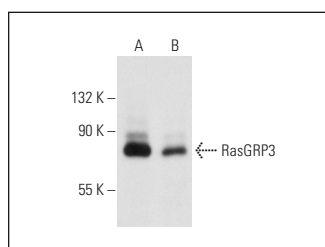
Molecular Weight of RasGRP3: 80 kDa.

Positive Controls: Ramos whole cell lysate: sc-2216, IB4 whole cell lysate: sc-364780 or Raji whole cell lysate: sc-364236.

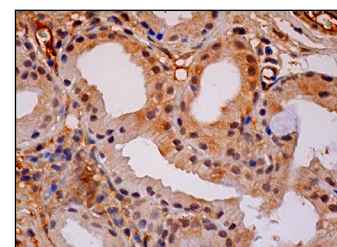
## RECOMMENDED SUPPORT REAGENTS

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<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> 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<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> 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



RasGRP3 (H-1): sc-271068. Western blot analysis of RasGRP3 expression in Ramos (A) and IB4 (B) whole cell lysates.



RasGRP3 (H-1): sc-271068. Immunoperoxidase staining of formalin fixed, paraffin-embedded human nasopharynx tissue showing cytoplasmic and nuclear staining of glandular cells.

## SELECT PRODUCT CITATIONS

1. Kaur, N., et al. 2022. A novel anti-proliferative PKCα-Ras-ERK signaling axis in intestinal epithelial cells. J. Biol. Chem. 298: 102121.

## RESEARCH USE

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

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