

# RasGRP4 (E-13): sc-131336

## BACKGROUND

RasGRP4 (Ras guanyl releasing protein 4) is a member of the RasGRP family of guanine nucleotide-releasing factors (GRFs) that activate Ras in mammalian cells and are preferentially expressed in hematopoietic cells. RasGRP4 is a mast cell-specific protein that is widely expressed during fetal development and can be found in spleen, liver, skeletal muscle, placenta, heart and lung tissues of adults. Localizing to the cytoplasm, RasGRP4 contains one EF-hand domain which binds calcium, an N-terminal Ras-GEF domain and a phorbol-ester/DAG-type zinc finger which binds DAG (diacylglycerol). RasGRP4 functions as a DAG-regulated, cation-dependent, guanine nucleotide exchange factor (GEF). Upon activation by DAG, RasGRP4 is recruited to the plasma membrane where it is believed to participate in membrane ruffling and the spreading of activated cells. Mutations in the gene encoding RASGRP4 can result in a higher susceptibility to asthma and cancer.

## REFERENCES

1. Yang, Y., et al. 2002. RasGRP4, a new mast cell-restricted Ras guanine nucleotide-releasing protein with calcium- and diacylglycerol-binding motifs. Identification of defective variants of this signaling protein in asthma, mastocytosis, and mast cell leukemia patients and demonstration of the importance of RasGRP4 in mast cell development and function. *J. Biol. Chem.* 277: 25756-25774.
2. Reuther, G.W., et al. 2002. RasGRP4 is a novel Ras activator isolated from acute myeloid leukemia. *J. Biol. Chem.* 277: 30508-30514.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 607320. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
4. Li, L., et al. 2003. RasGRP4 regulates the expression of prostaglandin D2 in human and rat mast cell lines. *J. Biol. Chem.* 278: 4725-4729.
5. Li, L., et al. 2003. Mast cells in airway hyporesponsive C3H/HeJ mice express a unique isoform of the signaling protein Ras guanine nucleotide releasing protein 4 that is unresponsive to diacylglycerol and phorbol esters. *J. Immunol.* 171: 390-397.

## CHROMOSOMAL LOCATION

Genetic locus: RASGRP4 (human) mapping to 19q13.2; Rasgrp4 (mouse) mapping to 7 B1.

## SOURCE

RasGRP4 (E-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of RasGRP4 of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-131336 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

RasGRP4 (E-13) is recommended for detection of RasGRP4 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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); non cross-reactive with other RasGRP family members.

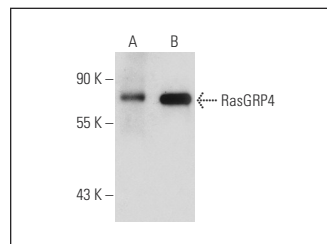
RasGRP4 (E-13) is also recommended for detection of RasGRP4 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for RasGRP4 siRNA (h): sc-97242, RasGRP4 siRNA (m): sc-152711, RasGRP4 shRNA Plasmid (h): sc-97242-SH, RasGRP4 shRNA Plasmid (m): sc-152711-SH, RasGRP4 shRNA (h) Lentiviral Particles: sc-97242-V and RasGRP4 shRNA (m) Lentiviral Particles: sc-152711-V.

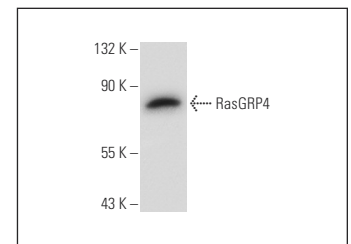
Molecular Weight of RasGRP4: 75 kDa.

Positive Controls: HEL 92.1.7 cell lysate: sc-2270, mouse thymus extract: sc-2406 or human PBL whole cell lysate.

## DATA



RasGRP4 (E-13): sc-131336. Western blot analysis of RasGRP4 expression in mouse thymus tissue extract (A) and human PBL whole cell lysate (B).



RasGRP4 (E-13): sc-131336. Western blot analysis of RasGRP4 expression in HEL 92.1.7 whole cell lysate.

## 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](http://www.scbt.com) or our catalog for detailed protocols and support products.



Try **RasGRP4 (E-2): sc-515508** or **RasGRP4 (B-16): sc-81900**, our highly recommended monoclonal alternatives to RasGRP4 (E-13).