

Ras-GRF1 (C-18): sc-863

BACKGROUND

A critical step in signal transduction responses to stimulation of cell surface receptors by their ligands involves the accumulation of Ras proteins in their active GTP-bound state. To reach their active GTP-bound state, Ras proteins must first release bound GDP, a rate limiting step mediated by a guanine nucleotide releasing factor (GRF). The mammalian Ras p21 GRF protein has been designated Ras-GRF1 p140. Ras-GRF1 accelerates release of GDP from H- and N-Ras p21 protein *in vitro*, but not from the related Ral A or Cdc42Hs GTP-binding proteins. Of interest, a region mapping within the amino terminal domain of Ras-GRF1 is similar to both the human breakpoint cluster protein, Bcr, and the Dbl proto-oncogene product, a guanine nucleotide releasing factor for Cdc42Hs. Ras-GRF2 p135 has also been identified. Ras-GRF2 p135 is highly homologous to Ras-GRF1 p140 except in the region between the REM and Cdc25 domains and appears to function similarly to Ras-GRF1 p140.

REFERENCES

1. Pearsall, R.S., et al. 1998. The Rasgrf1-repeat sequence (D9Ncvs53) maps between Mod1 and Rbp1 on mouse chromosome 9 and may define a putative imprinted region. *Mamm. Genome* 9: 261-262.
2. Yoon, B.J., et al. 2002. Regulation of DNA methylation of Ras-GRF1. *Nat. Genet.* 30: 92-96.
3. Arozarena, I., et al. 2004. Activation of H-Ras in the endoplasmic reticulum by the RasGRF family guanine nucleotide exchange factors. *Mol. Cell. Biol.* 24: 1516-1530.
4. Li, S., et al. 2006. Distinct roles for Ras-guanine nucleotide-releasing factor 1 (Ras-GRF1) and Ras-GRF2 in the induction of long-term potentiation and long-term depression. *J. Neurosci.* 26: 1721-1729.

CHROMOSOMAL LOCATION

Genetic locus: RASGRF1 (human) mapping to 15q25.1, RASGRF2 (human) mapping to 5q14.1; Rasgrf1 (mouse) mapping to 9 E3.1, Rasgrf2 (mouse) mapping to 13 C3.

SOURCE

Ras-GRF1 (C-18) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping at the C-terminus of Ras-GRF1 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-863 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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.

APPLICATIONS

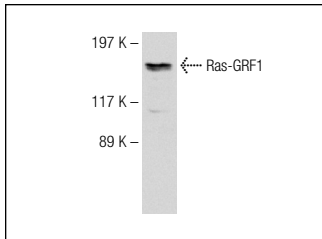
Ras-GRF1 (C-18) is recommended for detection of Ras-GRF1 p140 and, to a lesser extent, Ras-GRF2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), 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).

Ras-GRF1 (C-18) is also recommended for detection of Ras-GRF1 p140 and, to a lesser extent, Ras-GRF2 in additional species, including equine, canine, bovine and porcine.

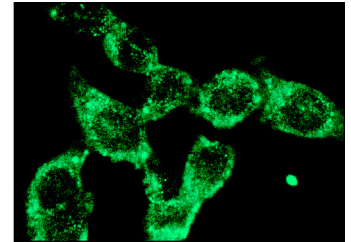
Molecular Weight of Ras-GRF1 isoforms: 140/55 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200.

DATA



Ras-GRF1 (C-18): sc-863. Western blot analysis of Ras-GRF1 expression in HeLa whole cell lysate.



Ras-GRF1 (C-18): sc-863. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic and membrane staining.

SELECT PRODUCT CITATIONS

1. Yang, H., et al. 2003. Phosphorylation of the Ras-GRF1 exchange factor at Ser 916/898 reveals activation of Ras signaling in the cerebral cortex. *J. Biol. Chem.* 278: 13278-13285.
2. Krapivinsky, G., et al. 2003. The NMDA receptor is coupled to the ERK pathway by a direct interaction between NR2B and Ras-GRF1. *Neuron* 40: 775-784.
3. Lang, V., et al. 2003. βTrCP-mediated proteolysis of NF-κB1 p105 requires phosphorylation of p105 serines 927 and 932. *Mol. Cell. Biol.* 23: 402-413.
4. Abreu, J.R., et al. 2009. The Ras guanine nucleotide exchange factor Ras-GRF1 promotes matrix metalloproteinase-3 production in rheumatoid arthritis synovial tissue. *Arthritis Res. Ther.* 11: R121.

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Try **Ras-GRF1 (D-12): sc-377234**, our highly recommended monoclonal alternative to Ras-GRF1 (C-18).