

Ras-GRF1 (D-12): sc-377234

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-GRF p140. Ras-GRF 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-GRF 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 RasGRF1. *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. Yoon, B., et al. 2005. RasGRF1 imprinting is regulated by a CTCF-dependent methylation-sensitive enhancer blocker. *Mol. Cell. Biol.* 25: 11184-11190.
5. Forlani, G., et al. 2006. The guanine nucleotide exchange factor RasGRF1 directly binds microtubules via DHPH2-mediated interaction. *FEBS J.* 273: 2127-2138.

CHROMOSOMAL LOCATION

Genetic locus: RASGRF1 (human) mapping to 15q25.1; Rasgrf1 (mouse) mapping to 9 E3.1.

SOURCE

Ras-GRF1 (D-12) is a mouse monoclonal antibody raised against amino acids 791-1262 mapping near the C-terminus of Ras-GRF1 p140 and Ras-GRF2 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Ras-GRF1 (D-12) is available conjugated to agarose (sc-377234 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-377234 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-377234 PE), fluorescein (sc-377234 FITC), Alexa Fluor® 488 (sc-377234 AF488), Alexa Fluor® 546 (sc-377234 AF546), Alexa Fluor® 594 (sc-377234 AF594) or Alexa Fluor® 647 (sc-377234 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-377234 AF680) or Alexa Fluor® 790 (sc-377234 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

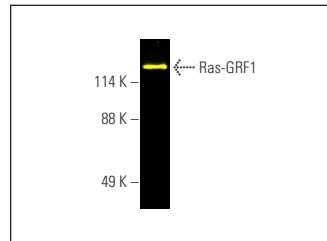
Ras-GRF1 (D-12) is recommended for detection of Ras-GRF1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution 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 Ras-GRF1 siRNA (h): sc-41732, Ras-GRF1 siRNA (m): sc-41733, Ras-GRF1 shRNA Plasmid (h): sc-41732-SH, Ras-GRF1 shRNA Plasmid (m): sc-41733-SH, Ras-GRF1 shRNA (h) Lentiviral Particles: sc-41732-V and Ras-GRF1 shRNA (m) Lentiviral Particles: sc-41733-V.

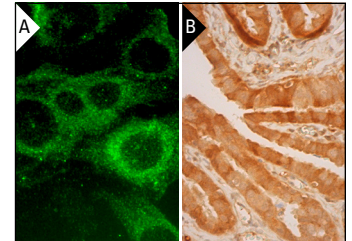
Molecular Weight of Ras-GRF1 isoforms: 140/55 kDa.

Positive Controls: rat brain extract: sc-2392.

DATA



Ras-GRF1 (D-12) Alexa Fluor® 488: sc-377234 AF488. Direct fluorescent western blot analysis of Ras-GRF1 expression in rat brain tissue extract. Blocked with UltraCruz® Blocking Reagent: sc-516214.



Ras-GRF1 (D-12): sc-377234. Immunofluorescence staining of methanol-fixed NIH/3T3 cells showing cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human fallopian tube tissue showing cytoplasmic staining of glandular cells (B).

SELECT PRODUCT CITATIONS

1. Cheng, Y., et al. 2020. RasGRF1 participates in the protective effect of tanshinone IIA on depressive like behaviors of a chronic unpredictable mild stress induced mouse model. *Gene* 754: 144817.
2. Du, Q., et al. 2022. Median nerve stimulation attenuates traumatic brain injury-induced comatose state by regulating the orexin-A/RasGRF1 signaling pathway. *World Neurosurg.* E-published.

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.

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