SANTA CRUZ BIOTECHNOLOGY, INC.

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

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 Ras-GRF1-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 Ras-GRF family guanine nucleotide exchange factors. Mol. Cell. Biol. 24: 1516-1530.
4. Yoon, B., et al. 2005. Ras-GRF1 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 Ras-GRF1 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

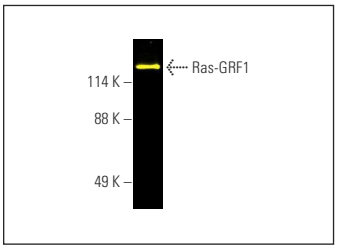
Ras-GRF1 (D-12) is recommended for detection of Ras-GRF1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution 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.

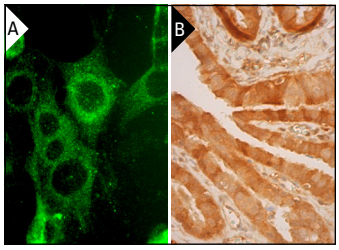
Molecular Weight of Ras-GRF1 isoforms: 140/55 kDa.

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. Ras-GRF1 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/Ras-GRF1 signaling pathway. World Neurosurg. 168: e19-e27.

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.