SANTA CRUZ BIOTECHNOLOGY, INC.

RasGRP1 (199): sc-8430

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The superfamily of GTP-binding proteins, of which Ras proteins are prototypes, has been implicated in a broad range of biological activities. Studies have identified a family of guanine nucleotide-releasing factors (GRFs) that activate Ras in mammalian cells and an "adapter" protein (Sem 5/GRB2) that appears to mediate the interaction of GRFs with activated receptor molecules. Subsequent to activation, Ras appears to interact with Raf, thereby activating the MAP kinase phosphorylation pathway. RasGRP1 is a guanyl nucleotide-releasing protein for Ras that contains two EF hand domains, which bind to calcium, and a diacylglycerol (DAG)-binding domain. RasGRP1 is expressed in the nervous system and lymphoid tissues and may link changes in DAG and calcium concentrations to Ras activation.

CHROMOSOMAL LOCATION

Genetic locus: RASGRP1 (human) mapping to 15q14; Rasgrp1 (mouse) mapping to 2 E5.

SOURCE

RasGRP1 (199) is a mouse monoclonal antibody raised against full length RasGRP1 of rat origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RasGRP1 (199) is available conjugated to agarose (sc-8430 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-8430 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-8430 PE), fluorescein (sc-8430 FITC), Alexa Fluor® 488 (sc-8430 AF488), Alexa Fluor® 546 (sc-8430 AF546), Alexa Fluor® 594 (sc-8430 AF594) or Alexa Fluor® 647 (sc-8430 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-8430 AF680) or Alexa Fluor® 790 (sc-8430 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

RasGRP1 (199) is recommended for detection of RasGRP1 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).

Suitable for use as control antibody for RasGRP1 siRNA (h): sc-36397, RasGRP1 siRNA (m): sc-36398, RasGRP1 siRNA (r): sc-270317, RasGRP1 shRNA Plasmid (h): sc-36397-SH, RasGRP1 shRNA Plasmid (m): sc-36398-SH, RasGRP1 shRNA Plasmid (r): sc-270317-SH, RasGRP1 shRNA (h) Lentiviral Particles: sc-36397-V, RasGRP1 shRNA (m) Lentiviral Particles: sc-36398-V and RasGRP1 shRNA (r) Lentiviral Particles: sc-270317-V.

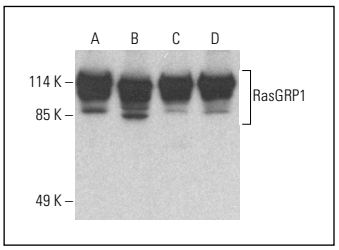
Molecular Weight of RasGRP1: 90 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, Raji whole cell lysate: sc-364236 or RAW 264.7 whole cell lysate: sc-2211.

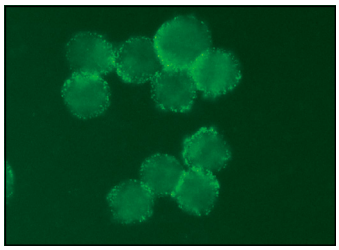
STORAGE

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

DATA



RasGRP1 (199) HRP: sc-8430 HRP. Direct western blot analysis of RasGRP1 expression in Jurkat (**A**), RAW 264.7 (**B**), MOLT-4 (**C**) and Raji (**D**) whole cell lysates.



RasGRP1 (199): sc-8430. Immunofluorescence staining of methanol-fixed EOC 20 cells showing membrane and cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Priatel, J.J., et al. 2002. RasGRP1 transduces low-grade TCR signals which are critical for T cell development, homeostasis, and differentiation. Immunity 17: 617-627.
2. Luke, C.T., et al. 2007. RasGRP1 overexpression in the epidermis of transgenic mice contributes to tumor progression during multistage skin carcinogenesis. Cancer Res. 67: 10190-10197.
3. Botelho, R.J., et al. 2009. Localized diacylglycerol-dependent stimulation of Ras and Rap1 during phagocytosis. J. Biol. Chem. 284: 28522-28532.
4. de la Luz Sierra, M., et al. 2010. The transcription factor Gfi1 regulates G-CSF signaling and neutrophil development through the Ras activator RasGRP1. Blood 115: 3970-3979.
5. Kortum, R.L., et al. 2012. Deconstructing ras signaling in the thymus. Mol. Cell. Biol. 32: 2748-2759.
6. Kortum, R.L., et al. 2013. A phospholipase C-γ1-independent, RasGRP1-ERK-dependent pathway drives lymphoproliferative disease in linker for activation of T cells-Y136F mutant mice. J. Immunol. 190: 147-158.
7. Sharma, A., et al. 2014. Targeted deletion of RasGRP1 impairs skin tumorigenesis. Carcinogenesis 35: 1084-1091.
8. Zhang, Y., et al. 2016. P120 catenin attenuates the angiotensin II-induced apoptosis of human umbilical vein endothelial cells by suppressing the mitochondrial pathway. Int. J. Mol. Med. 37: 623-630.
9. Fonseca, L.L., et al. 2020. RasGRP1 induces autophagy and transformation-associated changes in primary human keratinocytes. Transl. Oncol. 14: 100880.
10. Crittenden, J.R., et al. 2021. CalDAG-GEFI mediates striatal cholinergic modulation of dendritic excitability, synaptic plasticity and psychomotor behaviors. Neurobiol. Dis. 158:105473.

RESEARCH USE

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