SANTA CRUZ BIOTECHNOLOGY, INC.

RasGRP2 (A-14): sc-169112

BACKGROUND

RasGRP2 (ras guanyl releasing protein 2), also known as CDC25L or CALDAG-GEFI, is a 609 amino acid protein belonging to the RasGRP family of guanine nucleotide-releasing factors (GRFs) that activate Ras in mammalian cells and are preferentially expressed in hematopoietic cells. RasGRP2 acts as a calcium- and DAG-regulated nucleotide exchange factor that is expressed during fetal development in brain, lung, liver and kidney, and can also be found in heart, brain, lung, placenta, liver, skeletal muscle and kidney tissues of adults. Localizing to cytoplasm, RasGRP2 contains two EF-hand domains, which bind calcium, an N-terminal Ras-GEF domain and a phorbol-ester/DAG-type zinc finger, which binds DAG (diacylglycerol). RasGRP2 may participate in the muscarinic acetylcholine receptor (mAChR) signaling pathway as well as in aggregation of platelets and adhesion of T-lymphocytes and neutrophils through inside-out integrin activation. RasGRP2 exists as three alternatively spliced isoforms and is encoded by a gene located on human chromosome 11q13.1

REFERENCES

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2. Clyde-Smith, J., et al. 2000. Characterization of RasGRP2, a plasma membrane-targeted, dual specificity Ras/Rap exchange factor. J. Biol. Chem. 275: 32260-32267.
3. Dupuy, A.J., et al. 2001. Activation of the Rap1 guanine nucleotide exchange gene, CalDAG-GEF I, in BXH-2 murine myeloid leukemia. J. Biol. Chem. 276: 11804-11811.
4. Katagiri, K., et al. 2004. Rap1-mediated lymphocyte function-associated antigen-1 activation by the T cell antigen receptor is dependent on phospholipase C-γ1. J. Biol. Chem. 279: 11875-11881.
5. Caloca, M.J., et al. 2004. F-actin-dependent translocation of the Rap1 GDP/GTP exchange factor RasGRP2. J. Biol. Chem. 279: 20435-20446.
6. Ghandour, H., et al. 2007. Essential role for Rap1 GTPase and its guanine exchange factor CalDAG-GEFI in LFA-1 but not VLA-4 integrin mediated human T-cell adhesion. Blood 110: 3682-3690.
7. Bergmeier, W., et al. 2007. Mice lacking the signaling molecule CalDAG-GEFI represent a model for leukocyte adhesion deficiency type III. J. Clin. Invest. 117: 1699-1707.
8. Pasvolsky, R., et al. 2007. A LAD-III syndrome is associated with defective expression of the Rap-1 activator CalDAG-GEFI in lymphocytes, neutrophils, and platelets. J. Exp. Med. 204: 1571-1582.
9. Kuijpers, T.W., et al. 2009. LAD-1/variant syndrome is caused by mutations in FERMT3. Blood 113: 4740-4746.

CHROMOSOMAL LOCATION

Genetic locus: RASGRP2 (human) mapping to 11q13.1; Rasgrp2 (mouse) mapping to 19 A.

RESEARCH USE

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

SOURCE

RasGRP2 (A-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of RasGRP2 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-169112 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

RasGRP2 (A-14) is recommended for detection of RasGRP2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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.

RasGRP2 (A-14) is also recommended for detection of RasGRP2 in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for RasGRP2 siRNA (h): sc-96904, RasGRP2 siRNA (m): sc-152710, RasGRP2 shRNA Plasmid (h): sc-96904-SH, RasGRP2 shRNA Plasmid (m): sc-152710-SH, RasGRP2 shRNA (h) Lentiviral Particles: sc-96904-V and RasGRP2 shRNA (m) Lentiviral Particles: sc-152710-V.

Molecular Weight of RasGRP2: 75 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.