

SRGAP1 (S-14): sc-169424

BACKGROUND

SRGAPs contain a highly conserved overall primary structure and play an important role in the cell facilitating Slit-robo signaling in cell migration and axon guidance. SRGAP1 (Slit-robo Rho GTPase activating protein 1), also known as ARHGAP13 (Rho GTPase activating protein 13), functions as a GTPase-activating protein for Cdc42 and Rho A. Expressed in kidney, testis, lung and brain, SRGAP1 contains an FCH (Fes/CIP4 homology) domain, a RhoGAP domain and an SH3 domain. In the presence of Slit, SRGAP1 (via its SH3 domain) binds to the CC3 motif in robo (a protein responsible for mediating the repulsive effect of Slit) with higher affinity and inhibits Cdc42 activity in a robo/SRGAP-dependent manner. More specifically, SRGAP1 increases the intrinsic GTPase activity of Cdc42, thereby converting it to its inactive, GDP-bound form. Inactivation of Cdc42 ultimately leads to a decrease in actin polymerization.

REFERENCES

- Nagase, T., et al. 2000. Prediction of the coding sequences of unidentified human genes. XVI. The complete sequences of 150 new cDNA clones from brain which code for large proteins *in vitro*. *DNA Res.* 7: 65-73.
- Wong, K., et al. 2001. Signal transduction in neuronal migration: roles of GTPase activating proteins and the small GTPase Cdc42 in the Slit-Robo pathway. *Cell* 107: 209-221.
- Online Mendelian Inheritance in Man, OMIM[™]. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 606523. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
- Katoh, M., et al. 2003. FNP2 gene on human chromosome 1q32.1 encodes ARHGAP family protein with FCH, FBH, RhoGAP and SH3 domains. *Int. J. Mol. Med.* 11: 791-797.
- Katoh, M., et al. 2004. Identification and characterization of human FCHO2 and mouse Fcho2 genes in silico. *Int. J. Mol. Med.* 14: 327-331.
- Katoh, Y., et al. 2004. Identification and characterization of ARHGAP27 gene in silico. *Int. J. Mol. Med.* 14: 943-947.
- Katoh, M., et al. 2004. Characterization of human ARHGAP10 gene in silico. *Int. J. Oncol.* 25: 1201-1206.
- Li, X., et al. 2006. Structural basis of Robo proline-rich motif recognition by the srGAP1 Src homology 3 domain in the Slit-Robo signaling pathway. *J. Biol. Chem.* 281: 28430-28437.
- Vuori, K.A., et al. 2008. Tissue-specific expression of aryl hydrocarbon receptor and putative developmental regulatory modules in Baltic salmon yolk-sac fry. *Aquat. Toxicol.* 87: 19-27.

CHROMOSOMAL LOCATION

Genetic locus: SRGAP1 (human) mapping to 12q14.2; Srgap1 (mouse) mapping to 10 D2.

SOURCE

SRGAP1 (S-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of SRGAP1 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-169424 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

SRGAP1 (S-14) is recommended for detection of SRGAP1 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).

SRGAP1 (S-14) is also recommended for detection of SRGAP1 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for SRGAP1 siRNA (h): sc-95789, SRGAP1 siRNA (m): sc-153820, SRGAP1 shRNA Plasmid (h): sc-95789-SH, SRGAP1 shRNA Plasmid (m): sc-153820-SH, SRGAP1 shRNA (h) Lentiviral Particles: sc-95789-V and SRGAP1 shRNA (m) Lentiviral Particles: sc-153820-V.

Molecular Weight (predicted) of SRGAP1 isoforms: 124/122 kDa.

Molecular Weight (observed) of SRGAP1: 144-149 kDa.

Positive Controls: IMR-32 cell lysate: sc-2409.

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.

RESEARCH USE

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

PROTOCOLS

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