

ARHGEF18 (Q-14): sc-169960

BACKGROUND

Rho GTPases, which play fundamental roles in numerous cellular processes, are initiated by external stimuli that signal through G protein-coupled receptors. ARHGEF18 (Rho/Rac guanine nucleotide exchange factor (GEF) 18), also known as P114-RhoGEF, is a 1,173 amino acid cytoplasmic protein containing one DH (DBL-homology) domain and a PH domain. Widely expressed, ARHGEF18 is detected at highest levels in kidney and pancreas, with weak or no expression in liver, skeletal muscle and testis. ARHGEF18 acts as guanine nucleotide exchange factor (GEF) for RhoA GTPases. It is suggested that activation of ARHGEF18 induces formation of actin stress fibers, suggesting a role in actin cytoskeleton reorganization in different tissues. Existing as three alternatively spliced isoforms, ARHGEF18 is encoded by a gene located on human chromosome 19p13.2. ARHGEF18 interacts with G_β, G_γ, and Septin 9.

REFERENCES

- Blomquist, A., et al. 2000. Identification and characterization of a novel Rho-specific guanine nucleotide exchange factor. *Biochem. J.* 352: 319-325.
- Rümenapp, U., et al. 2002. A mammalian Rho-specific guanine-nucleotide exchange factor (p164-RhoGEF) without a pleckstrin homology domain. *Biochem. J.* 366: 721-728.
- Harrington, A.W., et al. 2002. Activation of Rac GTPase by p75 is necessary for c-jun N-terminal kinase-mediated apoptosis. *J. Neurosci.* 22: 156-166.
- Niu, J., et al. 2003. G protein βγ subunits stimulate p114RhoGEF, a guanine nucleotide exchange factor for RhoA and Rac1: regulation of cell shape and reactive oxygen species production. *Circ. Res.* 93: 848-856.
- Nagata, K., et al. 2005. Cytoskeletal modification of Rho guanine nucleotide exchange factor activity: identification of a Rho guanine nucleotide exchange factor as a binding partner for Sept9b, a mammalian septin. *Oncogene* 24: 65-76.

CHROMOSOMAL LOCATION

Genetic locus: ARHGEF18 (human) mapping to 19p13.2; Arhgef18 (mouse) mapping to 8 A1.1.

SOURCE

ARHGEF18 (Q-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of ARHGEF18 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-169960 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

ARHGEF18 (Q-14) is recommended for detection of ARHGEF18 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); non cross-reactive with other ARHGEF family members.

ARHGEF18 (Q-14) is also recommended for detection of ARHGEF18 in additional species, including porcine.

Suitable for use as control antibody for ARHGEF18 siRNA (h): sc-97769, ARHGEF18 siRNA (m): sc-141226, ARHGEF18 shRNA Plasmid (h): sc-97769-SH, ARHGEF18 shRNA Plasmid (m): sc-141226-SH, ARHGEF18 shRNA (h) Lentiviral Particles: sc-97769-V and ARHGEF18 shRNA (m) Lentiviral Particles: sc-141226-V.

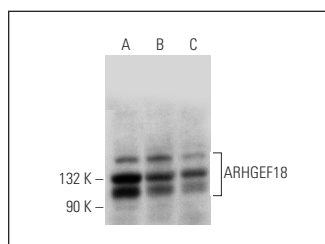
Molecular Weight of ARHGEF18: 131/114/116 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, HEK293 whole cell lysate: sc-45136 or RT-4 whole cell lysate: sc-364257.

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



ARHGEF18 (Q-14): sc-169960. Western blot analysis of ARHGEF18 expression in RT-4 (A), HEK293 (B) and HeLa (C) whole cell lysates.

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.