

ARHGEF15 (N-12): sc-160149

BACKGROUND

Rho GTPases, which play fundamental roles in numerous cellular processes, are initiated by external stimuli that signal through G protein-coupled receptors. ARHGEF15 (Rho guanine nucleotide exchange factor (GEF) 15), also known as ARGEF15 or Vsm-RhoGEF, is a 841 amino acid protein expressed in the vascular smooth muscle of coronary artery. ARHGEF15 functions as a specific guanine nucleotide exchange factor for RhoA and interacts with ephrin-A4 in vascular smooth muscle cells. Containing one DH (DBL-homology) domain, ARHGEF15 is phosphorylated on tyrosine residues upon ephrin-A1 stimulation. The DH domain consists of a region of about 150 amino acids that induces Rho family GTPases to release GDP. This effectively activates the Rho GTPase by allowing GTP binding. ARHGEF15 is encoded by a gene located on human chromosome 17, which comprises over 2.5% of the human genome and encodes over 1,200 genes.

REFERENCES

- Chan, A.M., et al. 1994. Expression cDNA cloning of a novel oncogene with sequence similarity to regulators of small GTP-binding proteins. *Oncogene* 9: 1057-1063.
- Snyder, J.T., et al. 2002. Structural basis for the selective activation of Rho GTPases by Dbl exchange factors. *Nat. Struct. Biol.* 9: 468-475.
- Ogita, H., et al. 2003. EphA4-mediated Rho activation via Vsm-RhoGEF expressed specifically in vascular smooth muscle cells. *Circ. Res.* 93: 23-31.
- Online Mendelian Inheritance in Man, OMIM™. 2004. Johns Hopkins University, Baltimore, MD. MIM Number: 608504. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
- O'Brien, M., et al. 2008. Expression of RhoGTPase regulators in human myometrium. *Reprod. Biol. Endocrinol.* 6: 1.
- Shin, E.Y., et al. 2009. Involvement of βPIX in angiotensin II-induced migration of vascular smooth muscle cells. *Exp. Mol. Med.* 41: 387-396.
- Wang, Z., et al. 2009. Regulation of immature dendritic cell migration by RhoA guanine nucleotide exchange factor Arhgef5. *J. Biol. Chem.* 284: 28599-28606.

CHROMOSOMAL LOCATION

Genetic locus: ARHGEF15 (human) mapping to 17p13.1; Arhgef15 (mouse) mapping to 11 B3.

SOURCE

ARHGEF15 (N-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of ARHGEF15 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-160149 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

ARHGEF15 (N-12) is recommended for detection of ARHGEF15 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.

Suitable for use as control antibody for ARHGEF15 siRNA (h): sc-93945, ARHGEF15 siRNA (m): sc-141223, ARHGEF15 shRNA Plasmid (h): sc-93945-SH, ARHGEF15 shRNA Plasmid (m): sc-141223-SH, ARHGEF15 shRNA (h) Lentiviral Particles: sc-93945-V and ARHGEF15 shRNA (m) Lentiviral Particles: sc-141223-V.

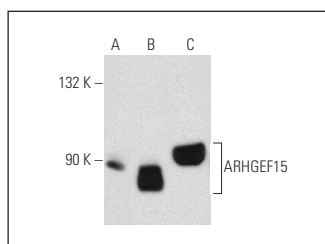
Molecular Weight of ARHGEF15: 92 kDa.

Positive Controls: A-10 cell lysate: sc-3806, rat skeletal muscle extract: sc-364810 or WI-38 whole cell lysate: sc-364260.

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



ARHGEF15 (N-12): sc-160149. Western blot analysis of ARHGEF15 expression in A-10 (A) and WI 38 (B) whole cell lysates and rat skeletal muscle tissue extract (C).

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.