

ARHGEF15 (Q-14): sc-160150

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., McGovern, E.S., Catalano, G., Fleming, T.P. and Miki, T. 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., Worthylake, D.K., Rossman, K.L., Betts, L., Pruitt, W.M., Siderovski, D.P., Der, C.J. and Sondek, J. 2002. Structural basis for the selective activation of Rho GTPases by Dbl exchange factors. *Nat. Struct. Biol.* 9: 468-475.
- Ogita, H., Kunitomo, S., Kamioka, Y., Sawa, H., Masuda, M. and Mochizuki, N. 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., Flynn, D., Mullins, B., Morrison, J.J. and Smith, T.J. 2008. Expression of RhoGTPase regulators in human myometrium. *Reprod. Biol. Endocrinol.* 6: 1.
- Shin, E.Y., Lee, C.S., Park, M.H., Kim, D.J., Kwak, S.J. and Kim, E.G. 2009. Involvement of β PIX in angiotensin II-induced migration of vascular smooth muscle cells. *Exp. Mol. Med.* 41: 387-396.
- Wang, Z., Kumamoto, Y., Wang, P., Gan, X., Lehmann, D., Smrcka, A.V., Cohn, L., Iwasaki, A., Li, L. and Wu, D. 2009. Regulation of immature dendritic cell migration by RhoA guanine nucleotide exchange factor ARHGEF15. *J. Biol. Chem.* 284: 28599-28606.

CHROMOSOMAL LOCATION

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

SOURCE

ARHGEF15 (Q-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of ARHGEF15 of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-160150 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

ARHGEF15 (Q-14) 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 μ g per 100-500 μ g 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.

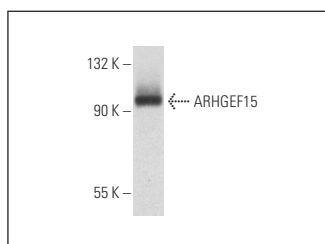
ARHGEF15 (Q-14) is also recommended for detection of ARHGEF15 in additional species, including equine, canine, bovine and porcine.

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: mouse liver extract: sc-2256, A-10 cell lysate: sc-3806 or rat skeletal muscle extract: sc-364810.

DATA



ARHGEF15 (Q-14): sc-160150. Western blot analysis of ARHGEF15 expression in mouse liver tissue extract.

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.