

# ARHGAP1 (A-9): sc-398889

## BACKGROUND

GTPase-activating proteins (GAPs) accelerate the intrinsic rate of GTP hydrolysis of Ras-related proteins, resulting in downregulation of their active form. ARHGAP1 (Rho GTPase activating protein 1), also known as CDC42GAP or Rho GAP1, is a 439 amino acid protein that localizes to the cytoplasm and contains one Rho GAP domain and one CRAL-TRIO domain. Expressed ubiquitously, ARHGAP1 exists in a complex with several other proteins, including eIF4A1 and Exportin 7, and functions as a GTPase activator for Rho, Rac and Cdc42 proteins, effectively converting them to an inactive GDP-bound state. The gene encoding ARHGAP1 maps to human chromosome 11, which houses over 1,400 genes and comprises nearly 4% of the human genome. Jervell and Lange-Nielsen syndrome, Jacobsen syndrome, Niemann-Pick disease, hereditary angioedema and Smith-Lemli-Opitz syndrome are associated with defects in genes that maps to chromosome 11.

## REFERENCES

- Garrett, M.D., et al. 1991. Purification and N-terminal sequence of the p21<sup>rho</sup> GTPase-activating protein, Rho GAP. *Biochem. J.* 276: 833-836.
- Diekmann, D., et al. 1991. Bcr encodes a GTPase-activating protein for p21<sup>rac</sup>. *Nature* 351: 400-402.
- Barfod, E.T., et al. 1993. Cloning and expression of a human CDC42 GTPase-activating protein reveals a functional SH3-binding domain. *J. Biol. Chem.* 268: 26059-26062.
- Lancaster, C.A., et al. 1994. Characterization of RhoGAP. A GTPase-activating protein for Rho-related small GTPases. *J. Biol. Chem.* 269: 1137-1142.
- Zhou, Y.T., et al. 2005. BNIP-2 induces cell elongation and membrane protrusions by interacting with Cdc42 via a unique Cdc42-binding motif within its BNIP-2 and Cdc42GAP homology domain. *Exp. Cell Res.* 303: 263-274.
- Wildenberg, G.A., et al. 2006. p120-catenin and p190RhoGAP regulate cell-cell adhesion by coordinating antagonism between Rac and Rho. *Cell* 127: 1027-1039.
- Engelse, M.A., et al. 2008. Differential gene expression analysis of tubule forming and non-tubule forming endothelial cells: CDC42GAP as a counter-regulator in tubule formation. *Angiogenesis* 11: 153-167.
- Shen, Y., et al. 2008. Nudel binds Cdc42GAP to modulate Cdc42 activity at the leading edge of migrating cells. *Dev. Cell* 14: 342-353.

## CHROMOSOMAL LOCATION

Genetic locus: ARHGAP1 (human) mapping to 11p11.2; Arhgap1 (mouse) mapping to 2 E1.

## SOURCE

ARHGAP1 (A-9) is a mouse monoclonal antibody raised against amino acids 1-76 mapping at the N-terminus of ARHGAP1 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

ARHGAP1 (A-9) is recommended for detection of ARHGAP1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

Suitable for use as control antibody for ARHGAP1 siRNA (h): sc-96477, ARHGAP1 siRNA (m): sc-141199, ARHGAP1 shRNA Plasmid (h): sc-96477-SH, ARHGAP1 shRNA Plasmid (m): sc-141199-SH, ARHGAP1 shRNA (h) Lentiviral Particles: sc-96477-V and ARHGAP1 shRNA (m) Lentiviral Particles: sc-141199-V.

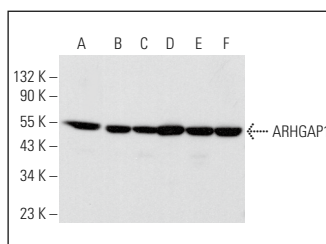
Molecular Weight of ARHGAP1: 50 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Sol8 cell lysate: sc-2249 or RAW 264.7 whole cell lysate: sc-2211.

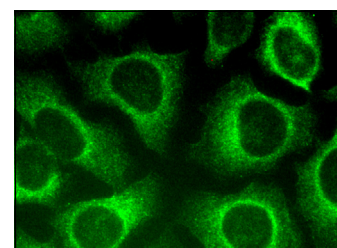
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA



ARHGAP1 (A-9): sc-398889. Western blot analysis of ARHGAP1 expression in RAW 264.7 (A), Sol8 (B), A-10 (C), HeLa (D), MIA PaCa-2 (E) and SJRH30 (F) whole cell lysates.



ARHGAP1 (A-9): sc-398889. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

## 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.