

# Rnd1 (K-16): sc-25029

## BACKGROUND

The Ras p21 family of guanine nucleotide proteins has been widely studied in view of its apparent role in signal transduction pathways and high frequency of mutations in human malignancies. It is now clear, however, that the Ras proteins (H-, K- and N-Ras p21) are members of a much larger superfamily of related proteins. Six members of this family, Rap 1A, Rap 1B, Rap 2, R-Ras, Ral A and Ral B, exhibit approximately 50% amino acid homology to Ras. The five mammalian Rho proteins (Rho A, B, C, 7 and 8) are approximately 30% homologous to Ras and are expressed in a wide range of cell types. Three Rho-related GTPases, Rnd1 (Rho 6), Rnd2 (Rho 7), and Rnd3 (Rho 8 or Rho E), form a distinct branch of the Rho family, since they differ from other Rho proteins in size, charge, and biochemical properties. Rnd proteins are likely to be farnesylated. All three appear to be constitutively in the activated GTP-bound form. Expression of Rnd1 or Rho 8 in mammalian cells inhibits the formation of actin stress fibers, membrane ruffles, and integrin-based focal adhesions, and induces loss of cell-substrate adhesion leading to cell rounding. This latter phenotype has resulted in the designation of the protein group Rnd, for "round". Rnd proteins act as negative regulators of actin assembly and of cell adhesion.

## REFERENCES

- Madaule, P. and Axel, R. 1985. A novel Ras-related gene family. *Cell* 41: 31-40.
- Barbacid, M. 1987. Ras genes. *Annu. Rev. Biochem.* 56: 779-827.
- Yeremian, P., et al. 1987. Nucleotide sequence of human Rho cDNA clone 12. *Nucleic Acids Res.* 15: 189.
- Olofsson, B., et al. 1988. Expression of the Ras-related Ral A, Rho 12 and Rab genes in adult mouse tissues. *Oncogene* 3: 231-234.
- Chardin, P. 1988. The Ras superfamily proteins. *Biochimie* 70: 865-868.
- Morris, J.D.M., et al. 1989. Scrape-loading of Swiss 3T3 cells with Ras protein rapidly activates protein kinase C in the absence of phospholipase hydrolysis. *Oncogene* 4: 27-31.

## CHROMOSOMAL LOCATION

Genetic locus: RND1 (human) mapping to 12q13.12; Rnd1 (mouse) mapping to 15 F1.

## SOURCE

Rnd1 (K-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Rnd1 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-25029 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## RESEARCH USE

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

## APPLICATIONS

Rnd1 (K-16) is recommended for detection of Rnd1 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).

Rnd1 (K-16) is also recommended for detection of Rnd1 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Rnd1 siRNA (h): sc-106516, Rnd1 siRNA (m): sc-152999, Rnd1 shRNA Plasmid (h): sc-106516-SH, Rnd1 shRNA Plasmid (m): sc-152999-SH, Rnd1 shRNA (h) Lentiviral Particles: sc-106516-V and Rnd1 shRNA (m) Lentiviral Particles: sc-152999-V.

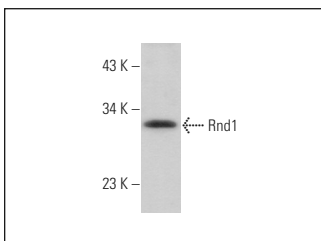
Molecular Weight of Rnd1: 32 kDa.

Positive Controls: AT3B-1 whole cell lysate: sc-364372.

## 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



Rnd1 (K-16): sc-25029. Western blot analysis of Rnd1 expression in AT3B-1 whole cell lysate.

## SELECT PRODUCT CITATIONS

- Li, Y.H., et al. 2009. Rnd1 regulates axon extension by enhancing the microtubule destabilizing activity of SCG10. *J. Biol. Chem.* 284: 363-371.

## STORAGE

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