

# Rap 1 (K-17): sc-34258

## BACKGROUND

Ras oncogenes encode GTP-binding proteins that are capable of transforming immortalized cells in culture. Two Ras-related human genes, designated RAP1A and RAP1B, encode 95% homologous proteins that share with Ras proteins a similar C-terminal Cys-Ali-Ali-Xaa sequence (1,2,8) and are ubiquitously expressed in mammalian tissues. The putative "effector" domain of Ras proteins whose integrity is required for cell transformation as well as interaction with the putative effector protein GAP is conserved in both Rap 1 proteins. It has been postulated that p21Rap 1 acts to interfere with Ras effector function by binding to Ras GAP. In fact, it is known that p21Rap 1 binds to Ras GAP *in vitro* in a GTP-dependent manner without affecting p21Rap 1 GTPase activity. A GAP protein specific for p21Rap 1 has been identified and the corresponding cDNA has been isolated.

## REFERENCES

1. Pizon, V., et al. 1988. Nucleotide sequence of a human cDNA encoding a Ras-related protein (Rap1B). *Nucleic Acids Res.* 16: 7719.
2. Culine, S., et al. 1989. Expression of the Ras-related Rap genes in human tumors. *Int. J. Cancer* 44: 990-994.
3. Kim, S., et al. 1990. Tissue and subcellular distributions of the smg-21/Rap 1/Krev-1 proteins which are partly distinct from those of c-Ras p21s. *Mol. Cell. Biol.* 10: 2645-2652.
4. Frech, M., et al. 1990. Inhibition of GTPase activating protein stimulation of Ras-p21 GTPase by the Krev-1 gene product. *Science* 249: 169-171.
5. Hata, Y., et al. 1990. Inhibition of the Ras p21 GTPase-activating protein-stimulated GTPase activity of c-Ha-Ras p21 by smg p21 having the same putative effector domain as Ras p21s. *J. Biol. Chem.* 265: 7104-7107.
6. Rubinfeld, B., et al. 1991. Molecular cloning of a GTPase activating protein specific for the Krev-1 protein p21Rap 1. *Cell* 65: 1033-1042.
7. Beranger, F., et al. 1991. Association of the Ras-antagonistic Rap 1/Krev-1 proteins with Golgi complex. *Proc. Natl. Acad. Sci. USA* 88: 1606-1610.

## CHROMOSOMAL LOCATION

Genetic locus: RAP1A (human) mapping to 1p13.2, RAP1B (human) mapping to 12q15; Rap1a (mouse) mapping to 3 F2.2, Rap1b (mouse) mapping to 10 D2.

## SOURCE

Rap 1 (K-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of Rap 1A 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-34258 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

Rap 1 (K-17) is recommended for detection of Rap 1A and Rap 1B 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).

Rap 1 (K-17) is also recommended for detection of Rap 1A and Rap 1B in additional species, including equine, canine, bovine, porcine and avian.

Molecular Weight of Rap 1: 21/24 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, HeLa whole cell lysate: sc-2200 or A-431 whole cell lysate: sc-2201.

## 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.

## 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](http://www.scbt.com) or our catalog for detailed protocols and support products.



Try **Rap 1 (E-6): sc-398755** or **Rap 1A (C-10): sc-373968**, our highly recommended monoclonal alternatives to Rap 1 (K-17). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **Rap 1 (E-6): sc-398755**.