

Rap 2 (V-19)-R: sc-1062-R

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 (namely Rap 1A and Rap 1B) that share a similar C-terminal Cys-Ali-Ali-Xaa sequence with Ras proteins 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. Rap 1A is thought to interfere with Ras effector function by binding to Ras GAP in a GTP-dependent manner without affecting Rap 1A GTPase activity. Rap 2, another Ras-related protein, shares 60% identity with Rap 1A and exhibits a carboxy terminal CAAX motif and two upstream cysteines similar to those of the H-Ras, K-Ras and N-Ras proteins. In contrast with Rap 1A and Rap 1B, overexpression of Rap 2 does not interfere with the Ras signaling pathway.

REFERENCES

1. Pizon, V., et al. 1988. Human cDNAs Rap 1 and Rap 2 homologous to the *Drosophila* gene dras3 encode proteins closely related to Ras in the "effector" region. *Oncogene* 3: 201-204.
2. Pizon, V., et al. 1988. Nucleotide sequence of a human cDNA encoding a Ras-related protein (Rap 1B). *Nucleic Acids Res.* 16: 7719.

SOURCE

Rap 2 (V-19)-R is an affinity purified rabbit polyclonal antibody raised against a peptide mapping at the C-terminus of Rap 2A 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-1062 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Rap 2 (V-19)-R is recommended for detection of Rap 2A, Rap 2B and Rap 2C of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:50-1:500), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:25, dilution range 1:25-1:250) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Rap 2 (V-19)-R is also recommended for detection of Rap 2A, Rap 2B, and Rap 2C in additional species, including canine, bovine, porcine and avian.

Molecular Weight of Rap 2: 21 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201, SW480 cell lysate: sc-2219 or K-562 whole cell lysate: sc-2203.

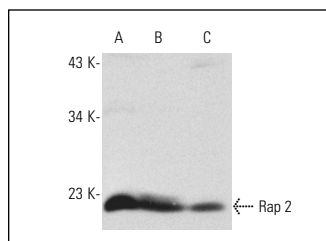
STORAGE

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

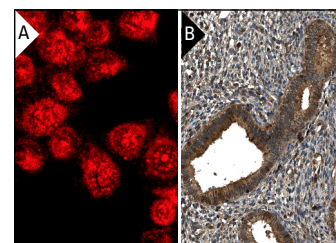
RESEARCH USE

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

DATA



Rap 2 (V-19)-R: sc-1062-R. Western blot analysis of Rap 2 expression in A-431 (A), SW480 (B) and K-562 (C) whole cell lysates.



Rap 2 (V-19)-R: sc-1062-R. Immunofluorescence staining of methanol-fixed HeLa cells showing membrane localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human corpus, uterine tissue showing cytoplasmic staining of glandular cells and cells in endometrial stroma magnification. Kindly provided by The Swedish Human Protein Atlas (HPA) program (B).

SELECT PRODUCT CITATIONS

1. Balduini, A., et al. 2004. Expression, activation, and subcellular localization of the Rap 1 GTPase in cord blood-derived human megakaryocytes. *Exp. Cell Res.* 300: 84-93.
2. Greco, F., et al. 2004. Activation of the small GTPase Rap 2B in agonist-stimulated human platelets. *J. Thromb. Haemost.* 2: 2223-2230.
3. Paganini, S., et al. 2006. Identification and biochemical characterization of Rap 2C, a new member of the Rap family of small GTP-binding proteins. *Biochimie* 88: 285-295.
4. Canobbio, I., et al. 2008. Targeting of the small GTPase Rap2b, but not Rap1b, to lipid rafts is promoted by palmitoylation at Cys176 and Cys177 and is required for efficient protein activation in human platelets. *Cell. Signal.* 20: 1662-1670.
5. Halm, S.T., et al. 2010. β -Adrenergic activation of electrogenic K⁺ and Cl⁻ secretion in guinea pig distal colonic epithelium proceeds via separate cAMP signaling pathways. *Am. J. Physiol. Gastrointest. Liver Physiol.* 299: G81-G95.
6. Liu, C., et al. 2010. The interaction of Epac1 and Ran promotes Rap1 activation at the nuclear envelope. *Mol. Cell. Biol.* 30: 3956-3969.
7. Schuster, C., et al. 2011. The cooperating mutation or "second hit" determines the immunologic visibility toward MYC-induced murine lymphomas. *Blood* 118: 4635-4645.

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