SANTA CRUZ BIOTECHNOLOGY, INC.

Rap 1 (121): sc-65

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 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. It has been postulated that p21Rap1 acts to interfere with Ras effector function by binding to Ras GAP. In fact it is known that p21Rap1 binds to Ras GAP *in vitro* in a GTP dependent manner without affecting p21Rap1 GTPase activity. The Rap 2 protein shares 60% identity with the Rap 1A protein 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 1, overexpression of Rap 2 does not interfere with the Ras signaling pathway.

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 (121) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping near the C-terminus of Rap 1 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-65 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Rap 1 (121) is recommended for detection of Rap 1A and Rap 1B p21 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), immunohistochemistry (including paraffin-embedded sections) (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 (121) is also recommended for detection of Rap 1A and Rap 1B p21 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for Rap 1 siRNA (h): sc-36384, Rap 1 siRNA (m): sc-36385, Rap 1 shRNA Plasmid (h): sc-36384-SH, Rap 1 shRNA Plasmid (m): sc-36385-SH, Rap 1 shRNA (h) Lentiviral Particles: sc-36384-V, Rap 1 shRNA (m) Lentiviral Particles: sc-36385-V.

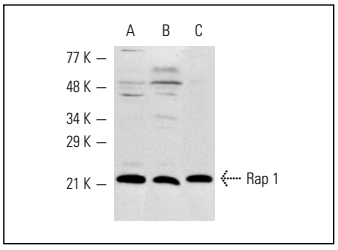
Molecular Weight of Rap 1: 21/24 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201, NIH/3T3 whole cell lysate: sc-2210 or SW480 cell lysate: sc-2219.

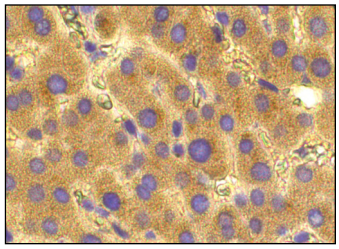
STORAGE

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

DATA



Rap 1 (121): sc-65. Western blot analysis of Rap 1 expression in A-431 (**A**), SW480 (**B**) and NIH/3T3 (**C**) whole cell lysates.



Rap 1 (121): sc-65. Immunoperoxidase staining of formalin fixed, paraffin-embedded human liver tissue showing cytoplasmic staining of hepatocytes.

SELECT PRODUCT CITATIONS

1. Vossler, M.R., et al. 1997. cAMP activates MAP kinase and Elk-1 through a B-Raf- and Rap 1 dependent pathway. Cell 89: 73-82.
2. Hernandez-Varas, P., et al. 2011. Rap 1-GTP-interacting adaptor molecule (RIAM) protein controls invasion and growth of melanoma cells. J. Biol. Chem. 286: 18492-18504.
3. García-Bernal, D., et al. 2011. RGS10 restricts upregulation by chemokines of T cell adhesion mediated by $\alpha 4\beta 1$ and $\alpha L\beta 2$ integrins. J. Immunol. 187: 1264-1272.
4. Pannekoek, W.J., et al. 2011. Epac1 and PDZ-GEF cooperate in Rap 1 mediated endothelial junction control. Cell. Signal. 23: 2056-2064.
5. Gloerich, M., et al. 2011. The nucleoporin RanBP2 tethers the cAMP effector Epac1 and inhibits its catalytic activity. J. Cell Biol. 193: 1009-1020.
6. Ross, S.H., et al. 2011. Ezrin is required for efficient Rap1-induced cell spreading. J. Cell Sci. 124: 1808-1818.
7. Leichner, G.S., et al. 2011. Metabolically regulated endoplasmic reticulum-associated degradation of 3-hydroxy-3-methylglutaryl-CoA reductase: evidence for requirement of a geranylgeranylated protein. J. Biol. Chem. 286: 32150-32161.
8. Miro-Moran, A., et al. 2012. Identification and function of exchange proteins activated directly by cyclic AMP (Epac) in mammalian spermatozoa. PLoS ONE 7: e37713.

RESEARCH USE

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