SANTA CRUZ BIOTECHNOLOGY, INC.

Rap 2 (12): sc-136138

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 (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., Chardin, P., Lerosey, I., Olofsson, B. and Tavitian, A. 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., Lerosey, I., Chardin, P. and Tavitian, A. 1988. Nucleotide sequence of a human cDNA encoding a Ras-related protein (Rap 1B). Nucleic Acids Res. 16: 7719.
3. Culine, S., Olofsson, B., Gosselin, S., Honore, N. and Tavitian, A. 1989. Expression of the Ras-related Rap genes in human tumors. Int. J. Cancer 44: 990-994.
4. Kitayama, H., Sugimoto, Y., Matsuzaki, T., Ikawa, Y. and Noda, M. 1989. A Ras-related gene with transformation suppressor activity. Cell 56: 77-84.
5. Kim, S., Mozoguchi, A., Kikuchi, A. and Takai, Y. 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.
6. Frech, M., John, J., Pizon, V., Chardin, P., Tavitian, A., Clark, R., McCormick, F. and Wittinghofer, A. 1990. Inhibition of GTPase activating protein stimulation of Ras-p21 GTPase by the Krev-1 gene product. Science 249: 169-171.
7. Beranger, F., Tavitian, A. and de Gunzburg, J. 1991. Posttranslational processing and subcellular localization of the Ras-related Rap 2 protein. Oncogene 6: 1835-1842.
8. Jimenez, B., Pizon, V., Lerosey, I., Beranger, F., Tavitian, A. and de Gunzburg, J. 1991. Effects of the Ras-related Rap 2 protein on cellular proliferation. Int. J. Cancer. 49: 471-479.

SOURCE

Rap 2 (12) is a mouse monoclonal antibody raised against amino acids 1-183 representing full length Rap 2B of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

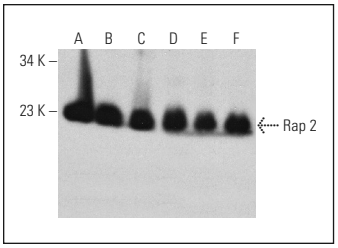
Rap 2 (12) is recommended for detection of Rap 2A, Rap 2B and Rap 2C of mouse, rat, human and avian origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Rap 2 (12) is also recommended for detection of Rap 2A, Rap 2B and Rap 2C in additional species, including canine.

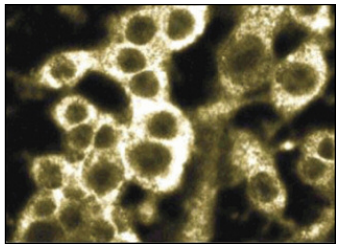
Molecular Weight of Rap 2: 21 kDa.

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

DATA



Rap 2 (12): sc-136138. Western blot analysis of Rap 2 expression in A-431 (**A**), SW480 (**B**) and K-562 (**C**) whole cell lysates and mouse brain (**D**), mouse PBL (**E**) and rat brain (**F**) tissue extracts.



Rap 2 (12): sc-136138. Immunofluorescence staining of mouse macrophage cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Wang, J.C., Lee, Y.J., Dang-Lawson, M., Pritchard, C. and Gold, M.R. 2018. The Rap2c GTPase facilitates B cell receptor-induced reorientation of the microtubule-organizing center. Small GTPases 19: 1-11.

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. Not for resale.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.