SANTA CRUZ BIOTECHNOLOGY, INC.

p-Ras GAP (pY460.19A): sc-136481

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The mammalian c-H-, c-K- and N-Ras proto-oncogenes encode ubiquitously expressed proteins. p21Ras can exist in either a physiologically quiescent GDP-binding state or a GTP-binding signal-emitting state. Oncogenic p21Ras proteins are trapped in the excited signal-emitting state because the mechanism normally employed to delimit their excitation period, hydrolysis of their bound GTP to GDP, is impaired as a result of specific mutations. Interaction of p21Ras with GTPase activating protein (GAP) can increase hydrolysis of p21Ras-bound GTP by as much as 1,000-fold. The product of the neurofibromatosis type 1 gene (NF1) has also been shown to exhibit p21Ras GAP activity, and proteins that stimulate the GTPase activity of three other low molecular weight GTPases, including Rho, Rab 3A and Rap 1, have also been described.

REFERENCES

1. Shih, T.Y., et al. 1980. Guanine nucleotide-binding and autophosphorylating activities associated with the p21^{src} protein of Harvey murine sarcoma virus. Nature 287: 686-691.
2. Barbacid, M. 1987. Ras genes. Annu. Rev. Biochem. 56: 779-827.
3. Vogel, U.S., et al. 1988. Cloning of bovine GAP and its interaction with oncogenic Ras p21. Nature 335: 90-93.
4. Trahey, M., et al. 1988. Molecular cloning of two types of GAP complementary DNA from human placenta. Science 242: 1697-1700.
5. McCormick, F. 1989. Ras GTPase activating protein: signal transmitter and signal terminator. Cell 56: 5-8.
6. Martin, G.A., et al. 1990. The GAP-related domain of the neurofibromatosis type 1 gene product interacts with Ras p21. Cell 63: 843-849.
7. Ballester, R., et al. 1990. The NF1 locus encodes a protein functionally related to mammalian GAP and yeast IRA proteins. Cell 63: 851-859.
8. Rubinfeld, B., et al. 1991. Molecular cloning of a GTPase activating protein specific for the Krev-1 protein p21rap1. Cell 65: 1033-1042.
9. Diekmann, D., et al. 1991. Bcr encodes a GTPase-activating protein for p21rac. Nature 351: 400-402.

CHROMOSOMAL LOCATION

Genetic locus: RASA1 (human) mapping to 5q14.3; Rasa1 (mouse) mapping to 13 C3.

SOURCE

p-Ras GAP (pY460.19A) is a mouse monoclonal antibody raised against a short amino acid sequence containing Tyr 460 phosphorylated Ras GAP of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

p-Ras GAP (pY460.19A) is recommended for detection of Tyr 460 phosphorylated Ras GAP of human origin and Tyr 451 phosphorylated Ras GAP of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for Ras GAP siRNA (h): sc-29467, Ras GAP siRNA (m): sc-36394, Ras GAP shRNA Plasmid (h): sc-29467-SH, Ras GAP shRNA Plasmid (m): sc-36394-SH, Ras GAP shRNA (h) Lentiviral Particles: sc-29467-V and Ras GAP shRNA (m) Lentiviral Particles: sc-36394-V.

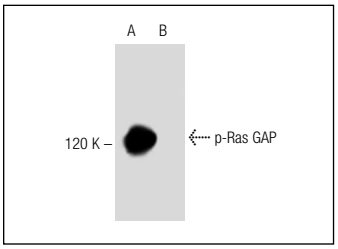
Molecular Weight of p-Ras GAP: 120 kDa.

Positive Controls: C2C12 whole cell lysate: sc-364188 or Sol8 cell lysate: sc-2249.

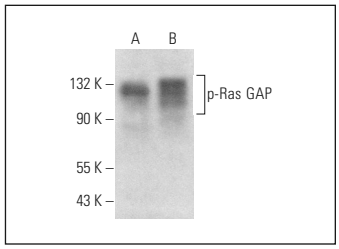
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Lambda Phosphatase: sc-200312A and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



p-Ras GAP (pY460.19A): sc-136481. Western blot analysis of Ras GAP phosphorylation in untreated (**A**) and alkaline phosphatase-treated (**B**) RSV-3T3 cells.



p-Ras GAP (pY460.19A): sc-136481. Western blot analysis of Ras GAP phosphorylation in C2C12 (**A**) and Sol8 (**B**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Tang, Y., et al. 2022. Pentapeptide AYP from *Isochrysis zhanjiangensis* exhibits antiangiogenic activity in HT1080 cells and HUVECs by suppressing migration and invasion *in vitro*. J. Agric. Food Chem. 70: 8481-8491.

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.