SANTA CRUZ BIOTECHNOLOGY, INC.

Ras GAP (D-6): sc-271436

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. Trahey, M., et al. 1988. Molecular cloning of two types of GAP complementary DNA from human placenta. Science 242: 1697-1700.
4. Vogel, U.S., et al. 1988. Cloning of bovine GAP and its interaction with oncogenic Ras p21. Nature 335: 90-93.
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.

CHROMOSOMAL LOCATION

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

SOURCE

Ras GAP (D-6) is a mouse monoclonal antibody raised against amino acids 171-448 of Ras GAP of human origin.

PRODUCT

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

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.

APPLICATIONS

Ras GAP (D-6) is recommended for detection of Ras GAP p120 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

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.

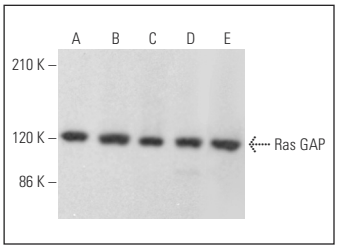
Molecular Weight of Ras GAP: 120 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, Caki-1 cell lysate: sc-2224 or A-431 whole cell lysate: sc-2201.

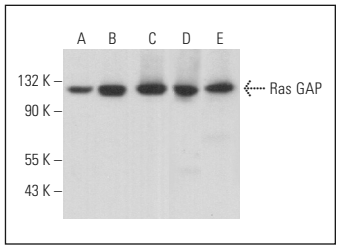
RECOMMENDED SUPPORT REAGENTS

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, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



Ras GAP (D-6): sc-271436. Western blot analysis of Ras GAP expression in NIH/3T3 (**A**), KNRK (**B**), IMR-32 (**C**), HEK293 (**D**) and A-431 (**E**) whole cell lysates.



Ras GAP (D-6): sc-271436. Western blot analysis of Ras GAP expression in IMR-32 (**A**), Caki-1 (**B**), Neuro-2A (**C**) and PC-12 (**D**) whole cell lysates and mouse postnatal brain tissue extract (**E**).

SELECT PRODUCT CITATIONS

1. Grossi, M., et al. 2005. Negative control of keratinocyte differentiation by Rho/CRIK signaling coupled with up-regulation of KyoT1/2 (FHL1) expression. Proc. Natl. Acad. Sci. USA 102: 11313-11318.

CONJUGATES

See **Ras GAP (B4F8): sc-63** for Ras GAP antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.