SANTA CRUZ BIOTECHNOLOGY, INC.

Ras GAP (D4B4): sc-64

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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 1000-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.
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 5q13.3; (mouse) mapping to 13 C3.

SOURCE

Ras GAP (D4B4) is a mouse monoclonal antibody raised against GAP protein.

PRODUCT

Each vial contains 200 µg IgG_1 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.

APPLICATIONS

Ras GAP (D4B4) is recommended for detection of Ras GTPase activating protein (GAP) p120 of mouse, rat and human 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 Ras GAP: 120 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201, KNRK whole cell lysate: sc-2214 or 3611-RF whole cell lysate: sc-2215.

SELECT PRODUCT CITATIONS

1. Zhang, D., et al. 2002. The dopamine D1 receptor is a critical mediator for cocaine-induced gene expression. J. Neurochem. 82: 1453-1464.
2. Kim, S., et al. 2018. Regulating BRCA1 protein stability by cathepsin S-mediated ubiquitin degradation. Cell Death Differ. 26: 812-825.

RESEARCH USE

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

PROTOCOLS

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

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.