SANTA CRUZ BIOTECHNOLOGY, INC.

p-Rac 1 (Ser 71): sc-135641

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

A large number of low molecular weight GTP-binding proteins of the Ras superfamily have been identified in eukaryotic cells; they regulate many fundamental processes such as cell growth, vesicle traffic and cytoskeletal organization. GTPase-activating proteins accelerate the intrinsic rate of GTP hydrolysis of Ras-related proteins, resulting in downregulation of their active form. Rac 1 is activated in a type I interferon (IFN) dependent manner; its function is required for downstream engagement of the p38 MAP kinase pathway. The p38 MAP kinase plays an essential role in IFN-dependent transcriptional regulation. The serine/threonine kinase Akt, of the phosphoinositide 3-kinase signal transduction pathway phosphorylates Serine 71 of Rac 1.

REFERENCES

1. Hall, A. 1990. The cellular functions of small GTP-binding proteins. Science 249: 636-640.
2. Xu, G.F., et al. 1990 The catalytic domain of the neurofibromatosis type 1 gene product stimulates Ras GTPase and complements IRA mutants of *S. cerevisiae*. Cell 63: 835-841.
3. 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.
4. Ballester, R., et al. 1990 The NF1 locus encodes a protein functionally related to mammalian GAP and yeast IRA proteins. Cell 63: 851-859.
5. Mackay, D.J., et al. 1998 ρ GTPases. J. Biol. Chem. 273: 20685-20688.
6. Kwon, T., et al. 2000. Akt protein kinase inhibits Rac1-GTP binding through phosphorylation at Serine 71 of Rac 1. J. Biol. Chem. 275: 423-428.
7. Uddin, S., et al. 2000 The Rac 1/p38 mitogen-activated protein kinase pathway is required for interferon α-dependent transcriptional activation but not serine phosphorylation of STAT proteins. J. Biol. Chem. 275: 27634-27640.

CHROMOSOMAL LOCATION

Genetic locus: RAC1 (human) mapping to 7p22.1; Rac1 (mouse) mapping to 5 G2.

SOURCE

p-Rac 1 (Ser 71) is a rabbit polyclonal antibody raised against a short amino acid sequence containing Ser 71 phosphorylated Rac 1 of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml 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

p-Rac 1 (Ser 71) is recommended for detection of Ser 71 phosphorylated Rac 1 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 Rac 1 siRNA (h): sc-36351, Rac 1 siRNA (m): sc-36352, Rac 1 shRNA Plasmid (h): sc-36351-SH, Rac 1 shRNA Plasmid (m): sc-36352-SH, Rac 1 shRNA (h) Lentiviral Particles: sc-36351-V and Rac 1 shRNA (m) Lentiviral Particles: sc-36352-V.

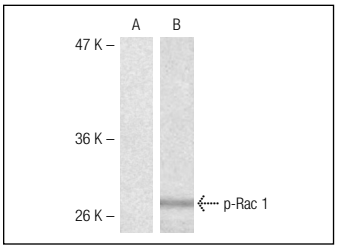
Molecular Weight of p-Rac 1: 28 kDa.

Positive Controls: PMA-treated 293 cell extract.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2333, Western Blotting Luminol Reagent: sc-2048 and Lambda Phosphatase: sc-200312A. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



p-Rac 1 (Ser 71): sc-135641. Western blot analysis of phosphorylated Rac 1 expression in untreated (**A**) and PMA-treated (**B**) 293 cell extracts.

SELECT PRODUCT CITATIONS

1. Sanchez, A.M., et al. 2013. Effects of progesterone and medroxyprogesterone on actin remodeling and neuronal spine formation. Mol. Endocrinol. 27: 693-702.
2. García-Ruiz, I., et al. 2014. High-fat diet decreases activity of the oxidative phosphorylation complexes and causes nonalcoholic steatohepatitis in mice. Dis. Model. Mech. 7: 1287-1296.

PROTOCOLS

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