SANTA CRUZ BIOTECHNOLOGY, INC.

Rac 1 (C-14): sc-217

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. These proteins regulate many fundamental processes in all eukaryotic cells such as growth, vesicle traffic and cytoskeletal organization. GTPase-activating proteins (GAPs) accelerate the intrinsic rate of GTP hydrolysis of Ras-related proteins, resulting in downregulation of their active form. Two proteins in this family, Rac 1 and Rac 2, are 92% identical and share GTP binding and GTP hydrolysis motifs with other members of the Ras superfamily. Rac 1 is expressed in a large number of different cell types. Rac 2 is primarily expressed only in myeloid cells and has been reported to be a regulatory component of the human neutrophil NADPH oxidase.

CHROMOSOMAL LOCATION

Genetic locus: RAC1 (human) mapping to 7p22.1, RAC3 (human) mapping to 17q25.3; Rac1 (mouse) mapping to 5 G2, Rac3 (mouse) mapping to 11 E2.

SOURCE

Rac 1 (C-14) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping at the C-terminus of Rac 1 of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Rac 1 (C-14) is available conjugated to agarose (sc-217 AC), 500 µg/0.25 ml agarose in 1 ml, for IP.

Blocking peptide available for competition studies, sc-217 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Rac 1 (C-14) is recommended for detection of Rac 1 and, to a lesser extent, Rac 3 of mouse, rat and human 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)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500); non cross-reactive with Rac 2.

Rac 1 (C-14) is also recommended for detection of Rac 1 and, to a lesser extent, Rac 3 in additional species, including equine, canine, bovine, porcine and avian.

Molecular Weight of Rac 1: 22 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201 or mouse embryo extract: sc-364239.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

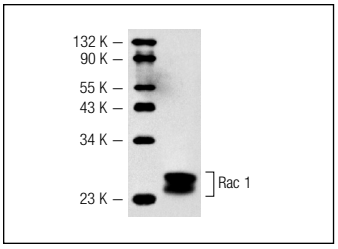
PROTOCOLS

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

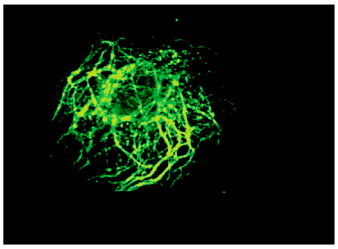
RESEARCH USE

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

DATA



Rac 1 (C-14): sc-217. Western blot analysis of human recombinant Rac 1.



Rac 1 (C-14): sc-217. Immunofluorescence staining of methanol-fixed rat embryo fibroblasts using fluorescein-labeled goat anti-rabbit IgG secondary antibody.

SELECT PRODUCT CITATIONS

1. Tolias, K.F., et al. 1998. Characterization of a Rac 1- and Rho GDI-associated lipid kinase signaling complex. Mol. Cell. Biol. 18: 762-770.
2. Lin, H.H., et al. 2011. Protocatechuic acid inhibits cancer cell metastasis involving the down-regulation of Ras/Akt/NFκB pathway and MMP-2 production by targeting RhoB activation. Br. J. Pharmacol. 162: 237-254.
3. Diaz-Cruz, A., et al. 2011. NOX2 activated by α1-adrenoceptors modulates hepatic metabolic routes stimulated by β-adrenoceptors. Free Radic. Res. 45: 1366-1378.
4. Roney, K.E., et al. 2011. Plexin-B2 negatively regulates macrophage motility, Rac, and Cdc42 activation. PLoS ONE 6: e24795.
5. Calvo, F., et al. 2011. RasGRF suppresses Cdc42-mediated tumour cell movement, cytoskeletal dynamics and transformation. Nat. Cell Biol. 13: 819-826.
6. Chen, J., et al. 2012. Atorvastatin reduces vascular endothelial growth factor (VEGF) expression in human non-small cell lung carcinomas (NSCLCs) via inhibition of reactive oxygen species (ROS) production. Mol. Oncol. 6: 62-72.
7. Hong, I.K., et al. 2012. Tetraspanin CD151 stimulates adhesion-dependent activation of Ras, Rac, and Cdc42 by facilitating molecular association between β1 integrins and small GTPases. J. Biol. Chem. 287: 32027-32039.
8. Tejera, E., et al. 2013. CD81 regulates cell migration through its association with Rac GTPase. Mol. Biol. Cell 24: 261-273.
9. Sanchez, A.M., et al. 2013. Effects of progesterone and medroxy-progesterone on actin remodeling and neuronal spine formation. Mol. Endocrinol. 27: 693-702.