SANTA CRUZ BIOTECHNOLOGY, INC.

# p-Rac 1 (Ser 71)-R: sc-12924-R

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 phospho-inositide 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.


## CHROMOSOMAL LOCATION

Genetic locus: RAC1 (human) mapping to 7p22.1.

## SOURCE

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

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-12924 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

p-Rac 1 (Ser 71)-R is recommended for detection of Ser 71 phosphorylated Rac 1 of 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)], 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).

p-Rac 1 (Ser 71)-R is also recommended for detection of correspondingly phosphorylated Rac 1 in additional species, including equine, bovine, porcine and avian.

Suitable for use as control antibody for Rac 1 siRNA (h): sc-36351, Rac 1 shRNA Plasmid (h): sc-36351-SH and Rac 1 shRNA (h) Lentiviral Particles: sc-36351-V.

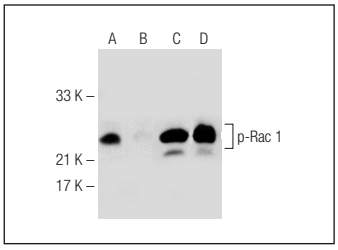
Molecular Weight of p-Rac 1: 28 kDa.

Positive Controls: A-431 + EGF whole cell lysate: sc-2202 or HeLa + PMA cell lysate: sc-2258.

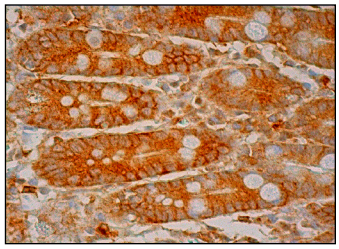
## STORAGE

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

## DATA




Western blot analysis of Rac 1 phosphorylation in untreated (**A**,**C**) and lambda protein phosphatase (sc-200312A) treated (**B**,**D**) HL-60 whole cell lysates. Antibodies tested include p-Rac 1 (Ser 71)-R: sc-12924-R (**A**,**B**) and Rac 1 (C-11): sc-95 (**C**,**D**).



p-Rac 1 (Ser 71)-R: sc-12924-R. Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing cytoplasmic staining of glandular cells.

## SELECT PRODUCT CITATIONS


1. Zhang, Q.G., et al. 2006. Akt inhibits MLK3/JNK3 signaling by inactivating Rac 1: a protective mechanism against ischemic brain injury. J. Neurochem. 98: 1886-1898.
2. Zhang, Q.G., et al. 2006. Ischemic preconditioning negatively regulates plenty of SH3s-mixed lineage kinase 3-Rac1 complex and c-Jun N-terminal kinase 3 signaling via activation of Akt. Neuroscience 143: 431-444.
3. Crema, V.O., et al. 2008. Distribution of small Rho GTPases in the developing rat submandibular gland. J. Mol. Histol. 39: 519-525.
4. Yan, K.H., et al. 2010. The synergistic anticancer effect of troglitazone combined with aspirin causes cell cycle arrest and apoptosis in human lung cancer cells. Mol. Carcinog. 49: 235-246.
5. Shiratsuchi, H., et al. 2012. Immunohistological study of small Rho GTPases and β-catenin during regeneration of the rat submandibular gland. J. Mol. Histol. 43: 751-759.
6. Shen, Y., et al. 2013. Integrins-FAK-Rho GTPases pathway in endothelial cells sense and response to surface wettability of plasma nanocoatings. ACS Appl. Mater. Interfaces 5: 5112-5121.
7. Shen, Y., et al. 2015. Effect of surface chemistry on the integrin induced pathway in regulating vascular endothelial cells migration. Colloids Surf. B Biointerfaces 126: 188-197.


## RESEARCH USE

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

## PROTOCOLS

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