SANTA CRUZ BIOTECHNOLOGY, INC.

Rac GAP1 (B-7): sc-166477

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. Through this function, GAPs negatively regulate Ras-mediated signaling. Rac GAP1 (Rac GTPase activating protein 1), also known as MgcRacGAP (male germ cell Rac GTPase activating protein), ID-GAP or HsCYK-4, functions as a GAP and exhibits strong activity towards Rac 1 and Cdc42. Highly expressed in thymus, placenta and testis with lower levels in spleen and peripheral blood lymphocytes, Rac GAP1 contains one Rho-GAP domain and one phorbol-ester/DAG-type zinc finger. Rac GAP1 plays an essential role in cytokinesis, functioning as a scaffold protein as well as a GTPase regulator. During cytokinesis, Rac GAP1 is phosphorylated at multiple sites.

CHROMOSOMAL LOCATION

Genetic locus: RACGAP1 (human) mapping to 12q13.12; Racgap1 (mouse) mapping to 15 F1.

SOURCE

Rac GAP1 (B-7) is a mouse monoclonal antibody raised against amino acids 142-437 mapping within an internal region of Rac GAP1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 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

Rac GAP1 (B-7) is recommended for detection of Rac GAP1 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 Rac GAP1 siRNA (h): sc-76335, Rac GAP1 siRNA (m): sc-76336, Rac GAP1 shRNA Plasmid (h): sc-76335-SH, Rac GAP1 shRNA Plasmid (m): sc-76336-SH, Rac GAP1 shRNA (h) Lentiviral Particles: sc-76335-V and Rac GAP1 shRNA (m) Lentiviral Particles: sc-76336-V.

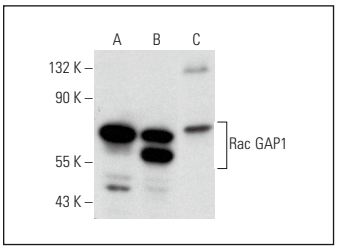
Molecular Weight of Rac GAP1: 70 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, Jurkat whole cell lysate: sc-2204 or H19-7/IGF-IR whole cell lysate.

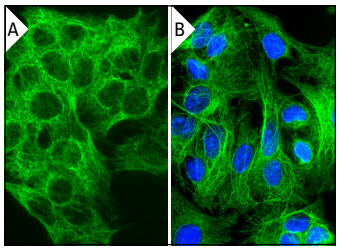
RECOMMENDED SUPPORT REAGENTS

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



Rac GAP1 (B-7): sc-166477. Western blot analysis of Rac GAP1 expression in K-562 (**A**), Jurkat (**B**) and H19-7/IGF-IR (**C**) whole cell lysates.



Rac GAP1 (B-7): sc-166477. Immunofluorescence staining of formalin-fixed Hep G2 cells showing cytoplasmic localization (**A**). Direct immunofluorescence staining of formalin-fixed Hep G2 cells showing cytoskeletal local-ization and DAPI counterstain. Rac GAP1 (B-7) antibody was conjugated to CruzFluor® 488 succinimidyl ester: sc-362617 (**B**).

SELECT PRODUCT CITATIONS

1. van Adrichem, A.J. and Wennerberg, K. 2015. MgcRacGAP inhibition stimulates JAK-dependent Stat3 activity. FEBS Lett. 589: 3859-3865.
2. Zanotti, S., et al. 2018. Botulinum toxin type A affects the transcriptome of cell cultures derived from muscle biopsies of controls and spastic patients. Toxicol. In Vitro 50: 124-136.
3. Chiu, S.C., et al. 2019. Overexpression of Aurora-A bypasses cytokinesis through phosphorylation of SLAN. Am. J. Physiol., Cell Physiol. 317: C600-C612.
4. Liu, J., et al. 2022. Metabolic enzyme LDHA activates Rac1 GTPase as a noncanonical mechanism to promote cancer. Nat. Metab. 4: 1830-1846.
5. Park, S., et al. 2023. The mammalian midbody and midbody remnant are assembly sites for RNA and localized translation. Dev. Cell 58: 1917-1932.e6.

PROTOCOLS

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