SANTA CRUZ BIOTECHNOLOGY, INC.

RCC1 (C-6): sc-374325

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The small Ras-related protein Ran, also called TC4, is a nuclear localized GTPase implicated in a diverse array of cellular processes including DNA replication, entry into and exit from mitosis and the transport of RNA and proteins through the nuclear pore complex. Like Ras, active Ran GTP and inactive Ran GDP levels are tightly regulated by guanine nucleotide exchange factors (GEFs) and GTPase activating proteins (GAPs). The abundant GEF, RCC1 (regulator of chromosome condensation 1), increases the rate at which Ran exchanges GDP for GTP. Ran GAP1 opposes the effects of RCC1 by increasing the rate at which Ran hydrolyzes GTP to GDP. A protein designated Ran BP1 has no intrinsic GAP activity and functions as a GEF inhibitor, deactivating RCC1 and thereby indirectly increasing the ratio of Ran GDP to Ran GTP. Ran BP2 has been proposed as the Ran GTP docking site at the periphery of the nuclear pore complex.

CHROMOSOMAL LOCATION

Genetic locus: RCC1 (human) mapping to 1p35.3; Rcc1 (mouse) mapping to 4 D2.3.

SOURCE

RCC1 (C-6) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 3-27 at the N-terminus of RCC1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-374325 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

RCC1 (C-6) is recommended for detection of RCC1 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 RCC1 siRNA (h): sc-36399, RCC1 siRNA (m): sc-36400, RCC1 shRNA Plasmid (h): sc-36399-SH, RCC1 shRNA Plasmid (m): sc-36400-SH, RCC1 shRNA (h) Lentiviral Particles: sc-36399-V and RCC1 shRNA (m) Lentiviral Particles: sc-36400-V.

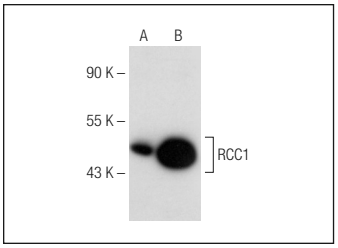
Molecular Weight of RCC1: 47 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, A-431 nuclear extract: sc-2122 or HeLa whole cell lysate: sc-2200.

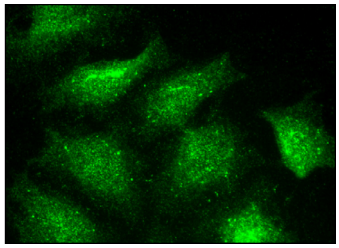
RECOMMENDED SUPPORT REAGENTS

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



RCC1 (C-6): sc-374325. Western blot analysis of RCC1 expression in Jurkat whole cell lysate (**A**) and A-431 nuclear extract (**B**).



RCC1 (C-6): sc-374325. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear and cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Yaffe, E., et al. 2014. Oncogenic properties of a spermatogenic meiotic variant of fer kinase expressed in somatic cells. Cancer Res. 74: 6474-6485.
2. Lezana, J.P., et al. 2016. Axonal PPARγ promotes neuronal regeneration after injury. Dev. Neurobiol. 76: 688-701.
3. Bao, X., et al. 2018. Mitosis-specific acetylation tunes Ran effector binding for chromosome segregation. J. Mol. Cell Biol. 10: 18-32.
4. Liang, L., et al. 2019. Deubiquitylase USP7 regulates human terminal erythroid differentiation by stabilizing GATA1. Haematologica 104: 2178-2187.
5. Volcic, M., et al. 2020. Vpu modulates DNA repair to suppress innate sensing and hyper-integration of HIV-1. Nat. Microbiol. 5: 1247-1261.

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.