

RCC1 (N-19): sc-1161

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 (N-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of RCC1 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.

RCC1 (N-19) is available conjugated to agarose (sc-1161 AC), 500 µg/0.25 ml agarose in 1 ml, for IP.

Blocking peptide available for competition studies, sc-1161 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

RCC1 (N-19) is recommended for detection of RCC1 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)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

RCC1 (N-19) is also recommended for detection of RCC1 in additional species, including equine, canine, bovine and porcine.

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.

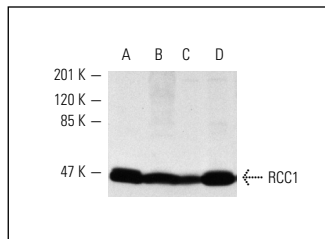
Molecular Weight of RCC1: 47 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201, Jurkat whole cell lysate: sc-2204 or KNRK whole cell lysate: sc-2214.

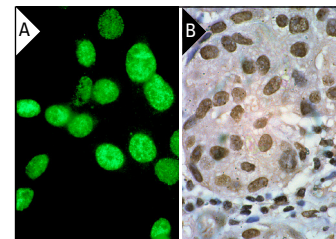
STORAGE

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

DATA



RCC1 (N-19): sc-1161. Western blot analysis of RCC1 expression in NIH/3T3 (A), KNRK (B), Jurkat (C) and A-431 (D) whole cell lysates.



RCC1 (N-19): sc-1161. Immunofluorescence staining of methanol-fixed NIH/3T3 cells showing nuclear localization (A). Immunoperoxidase staining of formalin-fixed, paraffin-embedded human colon carcinoma tissue at high magnification showing nuclear localization (B).

SELECT PRODUCT CITATIONS

- Guarguaglini, G., et al. 2000. Regulated Ran-binding protein 1 activity is required for organization and function of the mitotic spindle in mammalian cells *in vivo*. *Cell Growth Differ.* 11: 455-465.
- Tooley, C.E., et al. 2010. NRMT is an α -N-methyltransferase that methylates RCC1 and retinoblastoma protein. *Nature* 466: 1125-1128.
- Hamada, M., et al. 2011. Ran-dependent docking of importin- β to RanBP2/Nup358 filaments is essential for protein import and cell viability. *J. Cell Biol.* 194: 597-612.
- Nagai, M., et al. 2011. Mice lacking Ran binding protein 1 are viable and show male infertility. *FEBS Lett.* 585: 791-796.
- Whiley, P.A., et al. 2012. Changing subcellular localization of nuclear transport factors during human spermatogenesis. *Int. J. Androl.* 35: 158-169.
- Inoue, F., et al. 2012. Gbx2 directly restricts Otx2 expression to forebrain and midbrain, competing with class III POU factors. *Mol. Cell. Biol.* 32: 2618-2627.
- Grau, L., et al. 2013. A quantitative proteomic analysis uncovers the relevance of CUL3 in bladder cancer aggressiveness. *PLoS ONE* 8: e53328.

RESEARCH USE

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

MONOS
Satisfaction
Guaranteed

Try **RCC1 (E-6): sc-55559** or **RCC1 (F-2): sc-376049**, our highly recommended monoclonal alternatives to RCC1 (N-19).