SANTA CRUZ BIOTECHNOLOGY, INC.

RCC1 (C-20): sc-1162

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The small Ras-related protein Ran, also called TC4, is anuclear 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 BP-1 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. The protein Ran BP-2 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-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-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.

Blocking peptide available for competition studies, sc-1162 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

RCC1 (C-20) 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 (C-20) 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: RCC1 (m): 293T Lysate: sc-125894, A-431 whole cell lysate: sc-2201 or A-431 nuclear extract: sc-2122.

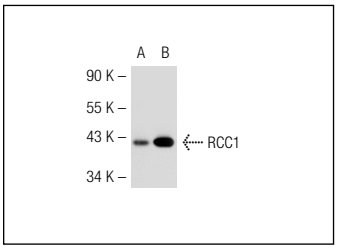
RESEARCH USE

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

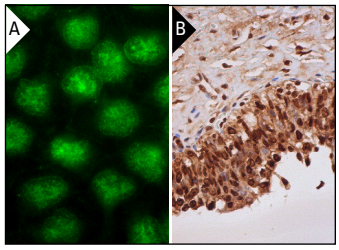
STORAGE

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

DATA



RCC1 (C-20): sc-1162. Western blot analysis of RCC1 expression in non-transfected: sc-117752 (**A**) and mouse RCC1 transfected: sc-125894 (**B**) 293T whole cell lysates.



RCC1 (C-20): sc-1162. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human urinary bladder tissue showing nuclear and cytoplasmic staining of urothelial cells (**B**).

SELECT PRODUCT CITATIONS

1. Guarguaglini, G., et al. 2000. Regulated Ran-binding protein 1 activity is required for organization and function of the mitotic spindle in mammalian vells *in vivo*. Cell Growth Differ. 11: 455-465.
2. Fontoura, B.M., et al. 2000. The nucleoporin Nup98 is a site for GDP/GTP exchange on Ran and termination of karyopherin β2-mediated nuclear import. J. Biol. Chem. 275: 31289-31296.
3. Di Fiore, B., et al. 2003. Mammalian RanBP1 regulates centrosome cohesion during mitosis. J. Cell Sci. 116: 3399-3411.
4. Yudin, D., et al. 2008. Localized regulation of axonal RanGTPase controls retrograde injury signaling in peripheral nerve. Neuron 59: 241-252.
5. Ciciarello, M., et al. 2010. Nuclear reformation after mitosis requires downregulation of the Ran GTPase effector RanBP1 in mammalian cells. Chromosoma 119: 651-668.
6. Hitakomate, E., et al. 2010. The methylated N-terminal tail of RCC1 is required for stabilisation of its interaction with chromatin by Ran in live cells. BMC Cell Biol. 11: 43.
7. Guarguaglini, G., et al. 2014. Immunofluorescence methods in studies of the GTPase RAN and its effectors in interphase and in mitotic cells. Methods Mol. Biol. 1120: 241-252.

PROTOCOLS

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