SANTA CRUZ BIOTECHNOLOGY, INC.

Ran BP-1 (C-19): sc-1160

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. The Ran BP2 protein has been proposed as the Ran GTP docking site at the periphery of the nuclear pore complex.

REFERENCES

1. Scheffzek, K., et al. 1995. Crystal structure of the nuclear Ras-related protein Ran in its GDP-bound form. Nature 374: 378-381.
2. Beddow, A.L., et al. 1995. The Ran/TC4 GTPase-binding domain: identification by expression cloning and characterization of a conserved sequence motif. Proc. Natl. Acad. Sci. USA 92: 3328-3332.

CHROMOSOMAL LOCATION

Genetic locus: RANBP1 (human) mapping to 22q11.21, LOC389842 (human) mapping to Xp21.3; Ranbp1 (mouse) mapping to 16 A3.

SOURCE

Ran BP-1 (C-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of Ran BP-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-1160 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Ran BP-1 (C-19) is recommended for detection of Ran BP-1 and LOC389842 of human origin and Ran BP-1 of mouse and rat 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).

Suitable for use as control antibody for Ran BP-1 siRNA (m): sc-41849, Ran BP-1 shRNA Plasmid (m): sc-41849-SH and Ran BP-1 shRNA (m) Lentiviral Particles: sc-41849-V.

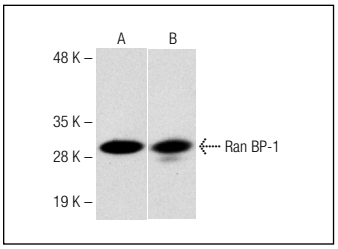
Molecular Weight of Ran BP-1: 28 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, F9 cell lysate: sc-2245 or mouse testis extract: sc-2405.

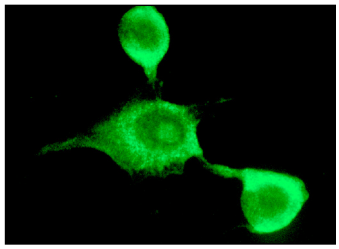
STORAGE

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 Ran BP-1 expression in NIH/3T3 whole cell lysates. Antibodies tested include Ran BP-1 (M-19): sc-1159 (**A**) and Ran BP-1 (C-19): sc-1160 (**B**).



Ran BP-1 (C-19): sc-1160. Immunofluorescence staining of methanol-fixed NIH/3T3 cells showing cytoplasmic staining.

SELECT PRODUCT CITATIONS

1. Di Fiore, B., et al. 2003. Mammalian Ran BP-1 regulates centrosome cohesion during mitosis. J. Cell Sci. 116: 3399-3411.
2. De Luca, A., et al. 2003. E1A deregulates the centrosome cycle in a Ran GTPase-dependent manner. Cancer Res. 63: 1430-1437.
3. Torosantucci, L., et al. 2008. Localized RanGTP accumulation promotes microtubule nucleation at kinetochores in somatic mammalian cells. Mol. Biol. Cell 19: 1873-1882.
4. Mutka, S.C., et al. 2009. Identification of nuclear export inhibitors with potent anticancer activity *in vivo*. Cancer Res. 69: 510-517.
5. Rensen, W.M., et al. 2009. RanBP1 downregulation sensitizes cancer cells to taxol in a caspase-3-dependent manner. Oncogene 28: 1748-1758.
6. Ciciarello, M., et al. 2010. Nuclear reformation after mitosis requires downregulation of the Ran GTPase effector RanBP1 in mammalian cells. Chromosoma 119: 651-668.
7. Kim, M., et al. 2012. Maspin genetically and functionally associates with gastric cancer by regulating cell cycle progression. Carcinogenesis 33: 2344-2350.
8. 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.

RESEARCH USE

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