

Ran BP-1 (35): sc-136054

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

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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.
3. Ren, M., et al. 1995. Separate domains of the Ran GTPase interact with different factors to regulate nuclear protein import and RNA processing. *Mol. Cell. Biol.* 15: 2117-2124.
4. Bischoff, F.R., et al. 1995. Co-activation of Ran GTPase and inhibition of GTP dissociation by Ran GTP binding protein Ran BP-1. *EMBO J.* 14: 705-715.
5. Klebe, C., et al. 1995. Interaction of the nuclear GTP-binding protein Ran with its regulatory proteins RCC1 and Ran GAP1. *Biochemistry* 34: 639-647.
6. Moroianu, J. and Blobel, G. 1995. Protein export from the nucleus requires the GTPase Ran and GTP hydrolysis. *Proc. Natl. Acad. Sci. USA* 92: 4318-4322.
7. Melchior, F., et al. 1995. GTP hydrolysis by Ran occurs at the nuclear pore complex in an early step of protein import. *J. Cell Biol.* 131: 571-581.

CHROMOSOMAL LOCATION

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

SOURCE

Ran BP-1 (35) is a mouse monoclonal antibody raised against amino acids 28-163 of Ran BP-1 of human origin.

PRODUCT

Each vial contains 50 µg IgG_{2a} in 0.5 ml PBS with < 0.1% sodium azide and 0.1% gelatin.

RESEARCH USE

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

APPLICATIONS

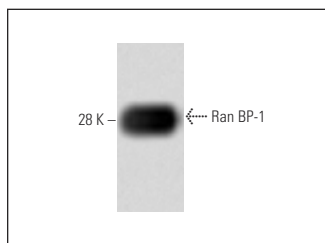
Ran BP-1 (35) is recommended for detection of Ran BP-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for Ran BP-1 siRNA (h): sc-41848, Ran BP-1 siRNA (m): sc-41849, Ran BP-1 shRNA Plasmid (h): sc-41848-SH, Ran BP-1 shRNA Plasmid (m): sc-41849-SH, Ran BP-1 shRNA (h) Lentiviral Particles: sc-41848-V and Ran BP-1 shRNA (m) Lentiviral Particles: sc-41849-V.

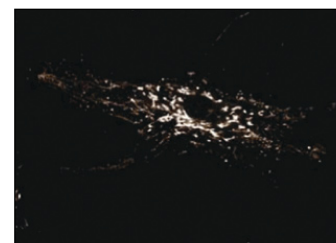
Molecular Weight of Ran BP-1: 28 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227.

DATA



Ran BP-1 (35): sc-136054. Western blot analysis of Ran BP-1 expression in Hep G2 whole cell lysate.



Ran BP-1 (35): sc-136054. Immunofluorescence staining of human fibroblast cells showing cytoplasmic localization.

STORAGE

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

PROTOCOLS

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