

Ran BP-3 (52): sc-136055

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 BP-3 acts as a scaffold protein to promote the efficient assembly of export complexes. Specifically, Ran BP-3 promotes binding of CRM1 to RCC1 in the presence of Ran. Ran BP-3 has also been shown to bind β -catenin, thereby inhibiting the Wnt signaling pathway.

REFERENCES

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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. Nemergut, M.E., et al. 2002. Ran binding protein 3 links CRM1 to the Ran guanine nucleotide exchange factor. *J. Biol. Chem.* 277: 17385-17388.
6. Petosa, C., et al. 2004. Architecture of CRM1/Exportin 1 suggests how cooperativity is achieved during formation of a nuclear export complex. *Mol. Cell* 16: 761-775.
7. Thorne, M.E. and Gottardi, C.J. 2005. Terminating Wnt signals: a novel nuclear export mechanism targets activated β -catenin. *J. Cell Biol.* 171: 761-763.
8. Hendriksen, J., et al. 2005. Ran BP-3 enhances nuclear export of active β -catenin independently of CRM1. *J. Cell Biol.* 171: 785-797.

CHROMOSOMAL LOCATION

Genetic locus: RANBP3 (human) mapping to 19p13.3.

SOURCE

Ran BP-3 (52) is a mouse monoclonal antibody raised against amino acids 30-225 of Ran BP-3 isoform 2 of human origin.

PRODUCT

Each vial contains 50 μ g IgG₁ in 500 μ l PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

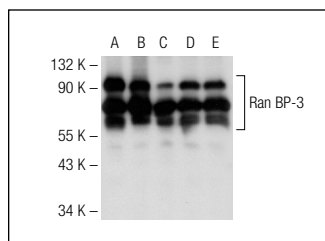
Ran BP-3 (52) is recommended for detection of Ran BP-3 isoform 2 and Ran BP-3 isoform 3 (also designated Ran BP-3a and Ran BP-3b, respectively) of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 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-3 siRNA (h): sc-61442, Ran BP-3 shRNA Plasmid (h): sc-61442-SH and Ran BP-3 shRNA (h) Lentiviral Particles: sc-61442-V.

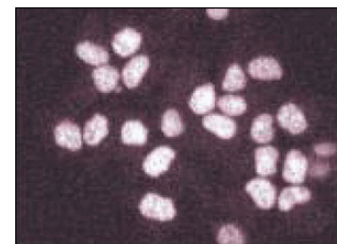
Molecular Weight of Ran BP-3: 60-100 kDa, depending on isoforms and cell lines.

Positive Controls: HeLa whole cell lysate: sc-2200, Jurkat nuclear extract: sc-2132 or U-937 nuclear extract: sc-2156.

DATA



Ran BP-3 (52): sc-136055. Western blot analysis of Ran BP-3 expression in WI 38 (A) and Y79 (B) whole cell lysates and U-937 (C), Jurkat (D) and Y79 (E) nuclear extracts.



Ran BP-3 (52): sc-136055. Immunofluorescence staining of HeLa cells showing nuclear staining.

STORAGE

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

RESEARCH USE

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

PROTOCOLS

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