

Ran BP-M (A-5): sc-271726

BACKGROUND

The small Ras-related protein Ran, also designated 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). Ran BP-M, also designated Ran-binding protein 9, is involved in the nucleation of microtubule networks and may also act as an adapter protein in the coupling of membrane receptors to intracellular signaling pathways. It has been implicated in the activation of androgen and glucocorticoid receptor. Ran BP-M contains phosphorylated serine residues, and can localize to both the nucleus and the cytoplasm; a phosphorylated form can be associated with the plasma membrane. Ran BP-M is ubiquitously expressed, with highest expression levels in heart, testis, muscle and placenta. The enzymatic activity of the Ran BP-M protein is associated with breast cancer progression and fragile-X mental retardation.

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.
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. Nakamura, M., et al. 1998. When overexpressed, a novel centrosomal protein, Ran BP-M, causes ectopic microtubule nucleation similar to γ -Tubulin. *J. Cell Biol.* 143: 1041-1052.
5. Rao, M.A., et al. 2002. Ran BP-M, a nuclear protein that interacts with and regulates transcriptional activity of androgen receptor and glucocorticoid receptor. *J. Biol. Chem.* 277: 48020-48027.

CHROMOSOMAL LOCATION

Genetic locus: RANBP9 (human) mapping to 6p23; Ranbp9 (mouse) mapping to 13 A4.

SOURCE

Ran BP-M (A-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 345-371 near the N-terminus of Ran BP-M of human origin.

PRODUCT

Each vial contains 200 μ g IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-271726 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

Ran BP-M (A-5) is recommended for detection of Ran BP-M isoform 1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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).

Suitable for use as control antibody for Ran BP-M siRNA (h): sc-45589, Ran BP-M siRNA (m): sc-45590, Ran BP-M shRNA Plasmid (h): sc-45589-SH, Ran BP-M shRNA Plasmid (m): sc-45590-SH, Ran BP-M shRNA (h) Lentiviral Particles: sc-45589-V and Ran BP-M shRNA (m) Lentiviral Particles: sc-45590-V.

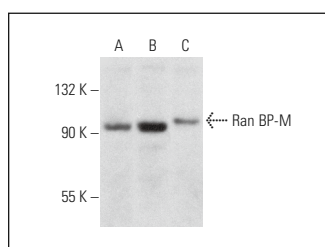
Molecular Weight of Ran BP-M: 91 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, MOLT-4 cell lysate: sc-2233 or HeLa whole cell lysate: sc-2200.

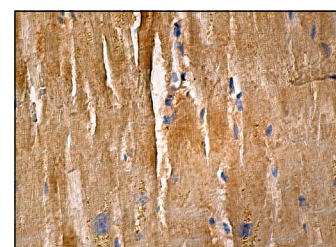
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgG κ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



Ran BP-M (A-5): sc-271726. Western blot analysis of Ran BP-M expression in HeLa (A), MOLT-4 (B) and NIH/3T3 (C) whole cell lysates.



Ran BP-M (A-5): sc-271726. Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart muscle tissue showing cytoplasmic staining of myocytes.

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.