SANTA CRUZ BIOTECHNOLOGY, INC.

Ran BP-M (F-1): sc-271727

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.

CHROMOSOMAL LOCATION

Genetic locus: RANBP9 (human) mapping to 6p23.

SOURCE

Ran BP-M (F-1) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 517-563 within an internal region of Ran BP-M of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Ran BP-M (F-1) is available conjugated to agarose (sc-271727 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-271727 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271727 PE), fluorescein (sc-271727 FITC), Alexa Fluor® 488 (sc-271727 AF488), Alexa Fluor® 546 (sc-271727 AF546), Alexa Fluor® 594 (sc-271727 AF594) or Alexa Fluor® 647 (sc-271727 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271727 AF680) or Alexa Fluor® 790 (sc-271727 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-271727 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

RESEARCH USE

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

APPLICATIONS

Ran BP-M (F-1) is recommended for detection of Ran BP-M isoform 1 and 2 of human origin by Western Blotting (starting dilution 1:100, 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).

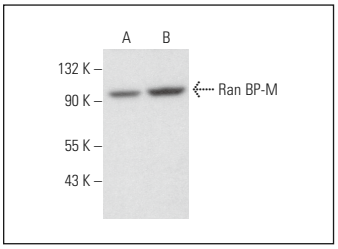
Ran BP-M (F-1) is also recommended for detection of Ran BP-M isoform 1 and 2 in additional species, including equine and canine.

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

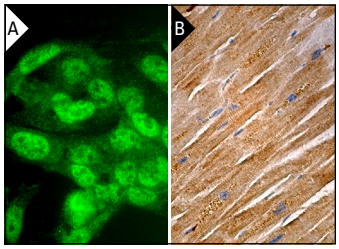
Molecular Weight of Ran BP-M: 91 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204 or CCRF-CEM cell lysate: sc-2225.

DATA



Ran BP-M (F-1): sc-271727. Western blot analysis of Ran BP-M expression in Jurkat (**A**) and CCRF-CEM (**B**) whole cell lysates.



Ran BP-M (F-1): sc-271727. Immunofluorescence staining of formalin-fixed Hep G2 cells showing nuclear and cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart muscle tissue showing cytoplasmic staining of myocytes (**B**).

SELECT PRODUCT CITATIONS

1. Salemi, L.M., et al. 2014. Aggresome formation is regulated by RanBPM through an interaction with HDAC6. Biol. Open 3: 418-430.
2. Maitland, M.E.R., et al. 2021. Proteomic analysis of ubiquitination substrates reveals a CTLH E3 ligase complex-dependent regulation of glycolysis. FASEB J. 35: e21825.
3. Onea, G., et al. 2022. Distinct nuclear and cytoplasmic assemblies and interactomes of the mammalian CTLH E3 ligase complex. J. Cell Sci. 135: jcs259638.
4. Deng, T., et al. 2024. ATM-Mediated translocation of RanBPM regulates DNA damage response by stabilizing p21 in non-small cell lung cancer cells. Cell. Oncol. 47: 245-258.

STORAGE

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