

Ran BP-2 (D-4): sc-74518

BACKGROUND

The small Ras-related protein Ran, also known as 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. Ran-binding protein 2 (Ran BP-2 or Nup358) is a large scaffold cyclophilin-related protein expressed in photoreceptor cells that contains four RanBD1 domains. Localization at cytoplasmic fibrils emanates Ran BP-2 from the nuclear pore complex, which then interacts with Ran-GTPase to support its role in nucleocytoplasmic transport processes. In humans, the Ran BP-2 gene lies in a hot spot for recombination on chromosome 2q. The genetic heterogeneity renders further significance of this genomic region in human disease due to its possible involvement in genetically linked disorders such as juvenile nephronophthisis, congenital hepatic fibrosis and chorioretinal dysplasia. Duplication events that occurred at the 3 Mb distal to Ran BP-2 gave rise to eight new genes encoding RGPD (RanBP2-like), GRIP domain-containing proteins, which are highly homologous to Ran BP-2.

SOURCE

Ran BP-2 (D-4) is a mouse monoclonal antibody raised against amino acids 1-300 mapping at the N-terminus of Ran BP-2 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Ran BP-2 (D-4) is available conjugated to agarose (sc-74518 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-74518 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-74518 PE), fluorescein (sc-74518 FITC), Alexa Fluor® 488 (sc-74518 AF488), Alexa Fluor® 546 (sc-74518 AF546), Alexa Fluor® 594 (sc-74518 AF594) or Alexa Fluor® 647 (sc-74518 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-74518 AF680) or Alexa Fluor® 790 (sc-74518 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Ran BP-2 (D-4) is recommended for detection of Ran BP-2 of mouse, rat and human origin, and the RGPD family of proteins 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Ran BP-2 siRNA (m): sc-36381, Ran BP-2 shRNA Plasmid (m): sc-36381-SH and Ran BP-2 shRNA (m) Lentiviral Particles: sc-36381-V.

Molecular Weight of Ran BP-2: 358 kDa.

Positive Controls: Y79 cell lysate: sc-2240, Ran BP-2 (m): 293T Lysate: sc-122957 or rat brain extract: sc-2392.

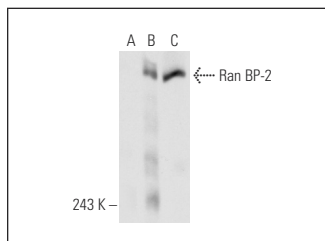
RESEARCH USE

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

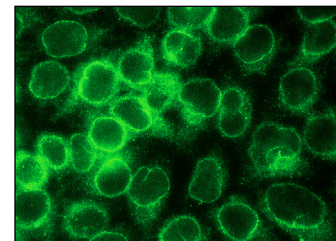
STORAGE

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

DATA



Ran BP-2 (D-4): sc-74518. Western blot analysis of Ran BP-2 expression in non-transfected: sc-117752 (A) and mouse Ran BP-2 transfected: sc-122957 (B); 293T whole cell lysates and rat brain tissue extract (C).



Ran BP-2 (D-4): sc-74518. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear membrane staining.

SELECT PRODUCT CITATIONS

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- Schertzer, M., et al. 2015. Human regulator of telomere elongation helicase 1 (RTEL1) is required for the nuclear and cytoplasmic trafficking of pre-U2 RNA. *Nucleic Acids Res.* 43: 1834-1847.
- Naylor, R.M., et al. 2016. Nuclear pore protein NUP88 activates anaphase-promoting complex to promote aneuploidy. *J. Clin. Invest.* 126: 543-559.
- Sahoo, M.R., et al. 2017. Nup358 binds to AGO proteins through its SUMO-interacting motifs and promotes the association of target mRNA with miRISC. *EMBO Rep.* 18: 241-263.
- Kim, H.J., et al. 2017. Zap70 and downstream RanBP2 are required for the exact timing of the meiotic cell cycle in oocytes. *Cell Cycle* 16: 1534-1546.
- Gilistro, E., et al. 2017. Importin-β and CRM1 control a RANBP2 spatiotemporal switch essential for mitotic kinetochore function. *J. Cell Sci.* 130: 2564-2578.
- Hazawa, M., et al. 2018. ROCK-dependent phosphorylation of NUP62 regulates p63 nuclear transport and squamous cell carcinoma proliferation. *EMBO Rep.* 19: 73-88.
- Lee, C.M., et al. 2019. JLP-centrosome is essential for the microtubule-mediated nucleocytoplasmic transport induced by extracellular stimuli. *Sci. Adv.* 5: eaav0318.

PROTOCOLS

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

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