SANTA CRUZ BIOTECHNOLOGY, INC.

Ran BP-3 (D-2): sc-377253

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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

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. Bischoff, F.R., et al. 1995. Co-activation of Ran GTPase and inhibition of GTP dissociation by Ran-GTP binding protein Ran BP1. 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/Exportin1 suggests how cooperativity is achieved during formation of a nuclear export complex. Mol. Cell 16: 761-775.

CHROMOSOMAL LOCATION

Genetic locus: RANBP3 (human) mapping to 19p13.3; Ranbp3 (mouse) mapping to 17 D.

SOURCE

Ran BP-3 (D-2) is a mouse monoclonal antibody raised against amino acids 1-175 mapping at the N-terminus of Ran BP-3 of mouse 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-3 (D-2) is available conjugated to agarose (sc-377253 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-377253 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-377253 PE), fluorescein (sc-377253 FITC), Alexa Fluor® 488 (sc-377253 AF488), Alexa Fluor® 546 (sc-377253 AF546), Alexa Fluor® 594 (sc-377253 AF594) or Alexa Fluor® 647 (sc-377253 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-377253 AF680) or Alexa Fluor® 790 (sc-377253 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Ran BP-3 (D-2) is recommended for detection of Ran BP-3 of mouse, rat and 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-3 siRNA (h): sc-61442, Ran BP-3 siRNA (m): sc-61443, Ran BP-3 shRNA Plasmid (h): sc-61442-SH, Ran BP-3 shRNA Plasmid (m): sc-61443-SH, Ran BP-3 shRNA (h) Lentiviral Particles: sc-61442-V and Ran BP-3 shRNA (m) Lentiviral Particles: sc-61443-V.

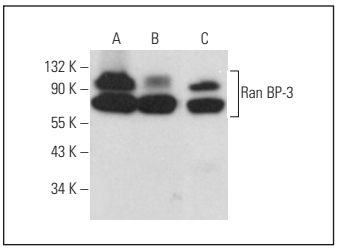
Molecular Weight of Ran BP-3: 60-100 kDa.

Positive Controls: NIH/3T3 nuclear extract: sc-2138, F9 cell lysate: sc-2245 or EOC 20 whole cell lysate: sc-364187.

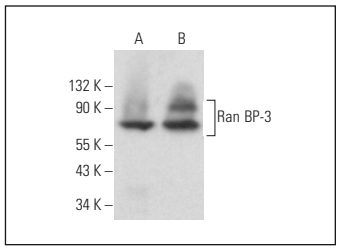
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



Ran BP-3 (D-2): sc-377253. Western blot analysis of Ran BP-3 expression in F9 (**A**), 3T3-L1 (**B**) and EOC 20 (**C**) whole cell lysates.



Ran BP-3 (D-2): sc-377253. Western blot analysis of Ran BP-3 expression in NIH/3T3 nuclear extract (**A**) and F9 whole cell lysate (**B**).

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.

PROTOCOLS

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