

Ran (C-20): sc-1156

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 GAP1 opposes the effects of RCC1 by increasing the rate at which Ran hydrolyzes GTP to GDP. A protein designated Ran BP-1 has no intrinsic GAP activity and functions as a GEF inhibitor deactivating RCC1, thereby indirectly increasing the ratio of Ran GDP to Ran GTP. The protein Ran BP-2 has been proposed as the Ran GTP docking site at the periphery of the nuclear pore complex.

CHROMOSOMAL LOCATION

Genetic locus: RAN (human) mapping to 12q24.33; Ran (mouse) mapping to 5 G1.3.

SOURCE

Ran (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of Ran of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Ran (C-20) is available conjugated either phycoerythrin (sc-1156 PE, 200 µg/ml) or fluorescein (sc-1156 FITC, 200 µg/ml), for IF, IHC(P) and FCM.

In addition, Ran (C-20) is available conjugated to TRITC (sc-1156 TRITC, 200 µg/ml), for IF, IHC(P) and FCM.

Blocking peptide available for competition studies, sc-1156 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Ran (C-20) is recommended for detection of Ran of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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), flow cytometry (1 µg per 1 x 10⁶ cells) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000). Ran (C-20) is also recommended for detection of Ran in additional species, including equine, canine, bovine, porcine and avian. Suitable for use as control antibody for Ran siRNA (h): sc-36382, Ran siRNA (m): sc-152698, Ran shRNA Plasmid (h): sc-36382-SH, Ran shRNA Plasmid (m): sc-152698-SH, Ran shRNA (h) Lentiviral Particles: sc-36382-V and Ran shRNA (m) Lentiviral Particles: sc-152698-V.

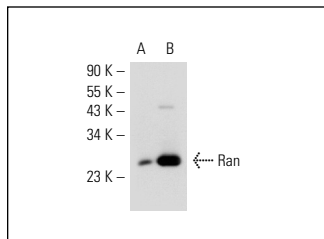
Molecular Weight of Ran: 28 kDa.

Positive Controls: Ran (h): 293 Lysate: sc-110522, A-431 whole cell lysate: sc-2201 or HeLa whole cell lysate: sc-2200.

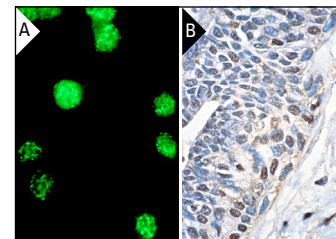
STORAGE

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

DATA



Ran (C-20): sc-1156. Western blot analysis of Ran expression in non-transfected: sc-110760 (A) and human Ran transfected: sc-110522 (B) 293 whole cell lysates.



Ran (C-20): sc-1156. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization (A). Immunoperoxidase staining of formalin-fixed, paraffin-embedded normal human breast tissue showing nuclear localization (B).

SELECT PRODUCT CITATIONS

- Guarguaglini, G., et al. 2000. Regulated Ran-binding protein 1 activity is required for organization and function of the mitotic spindle in mammalian cells *in vivo*. *Cell Growth Differ.* 11: 455-465.
- Hitakomate, E., et al. 2010. The methylated N-terminal tail of RCC1 is required for stabilisation of its interaction with chromatin by Ran in live cells. *BMC Cell Biol.* 11: 43.
- Barrès, V., et al. 2010. An essential role for Ran GTPase in epithelial ovarian cancer cell survival. *Mol. Cancer* 9: 272.
- Koumakpayi, I.H., et al. 2011. Macropinocytosis inhibitors and Arf6 regulate ErbB3 nuclear localization in prostate cancer cells. *Mol. Carcinog.* 50: 901-912.
- Hwang, H.I., et al. 2011. Phosphorylation of Ran-binding protein-1 by Polo-like kinase-1 is required for interaction with Ran and early mitotic progression. *J. Biol. Chem.* 286: 33012-33020.
- Rose, A.E., et al. 2011. Clinical relevance of SKP2 alterations in metastatic melanoma. *Pigment Cell Melanoma Res.* 24: 197-206.
- Roscioli, E., et al. 2012. Importin-β negatively regulates multiple aspects of mitosis including RANGAP1 recruitment to kinetochores. *J. Cell Biol.* 196: 435-450.

RESEARCH USE

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

MONOS
Satisfaction
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Try **Ran (A-7): sc-271376** or **Ran (ARAN1): sc-58467**, our highly recommended monoclonal alternatives to Ran (C-20).