SANTA CRUZ BIOTECHNOLOGY, INC.

Ran GAP1 (H-180): sc-25630

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 GAP1 opposes the effects of RCC1 by increasing the rate at which Ran hydrolyzes GTP to GDP. A protein designated Ran BP1 has no intrinsic GAP activity and functions as a GEF inhibitor deactivating RCC1 and thereby indirectly increasing the ratio of Ran GDP to Ran GTP. Ran BP2 has been proposed as the Ran GTP docking site at the periphery of the nuclear pore complex.

CHROMOSOMAL LOCATION

Genetic locus: RANGAP1 (human) mapping to 22q13.2; Rangap1 (mouse) mapping to 15 E1.

SOURCE

Ran GAP1 (H-180) is a rabbit polyclonal antibody raised against amino acids 408-587 mapping at the C-terminus of Ran GAP1 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.

STORAGE

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

APPLICATIONS

Ran GAP1 (H-180) is recommended for detection of Ran GAP1 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Ran GAP1 (H-180) is also recommended for detection of Ran GAP1 in additional species, including equine, canine and bovine.

Suitable for use as control antibody for Ran GAP1 siRNA (h): sc-37159, Ran GAP1 siRNA (m): sc-37160, Ran GAP1 shRNA Plasmid (h): sc-37159-SH, Ran GAP1 shRNA Plasmid (m): sc-37160-SH, Ran GAP1 shRNA (h) Lentiviral Particles: sc-37159-V and Ran GAP1 shRNA (m) Lentiviral Particles: sc-37160-V.

Molecular Weight of cytoplasmic Ran GAP1: 70 kDa.

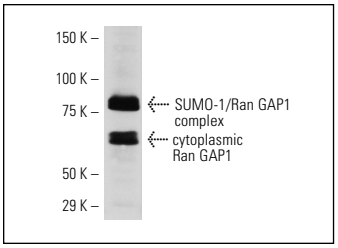
Molecular Weight of SUMO-1 modified Ran GAP1: 90 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206 or NTERA-2 cl.D1 whole cell lysate: sc-364181.

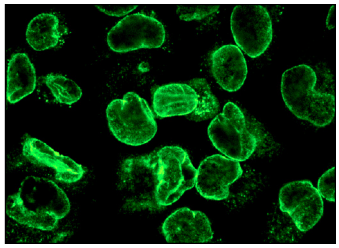
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



Ran GAP1 (H-180): sc-25630. Western blot analysis of Ran GAP1 expression of the cytoplasmic and nuclear envelope associated forms in MCF7 whole cell lysate.



Ran GAP1 (H-180): sc-25630. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear envelope localization.

SELECT PRODUCT CITATIONS

1. Yang, J., et al. 2005. Novel roles of unphosphorylated STAT3 in oncogenesis and transcriptional regulation. Cancer Res. 65: 939-947.
2. Torosantucci, L., et al. 2008. Localized RanGTP accumulation promotes microtubule nucleation at kinetochores in somatic mammalian cells. Mol. Biol. Cell 19: 1873-1882.
3. Roscioli, E., et al. 2012. Importin-β negatively regulates multiple aspects of mitosis including RANGAP1 recruitment to kinetochores. J. Cell Biol. 196: 435-450.
4. Wu, N., et al. 2012. Scc1 sumoylation by Mms21 promotes sister chromatid recombination through counteracting Wapl. Genes Dev. 26: 1473-1485.
5. Guarguaglini, G., et al. 2014. Immunofluorescence methods in studies of the GTPase RAN and its effectors in interphase and in mitotic cells. Methods Mol. Biol. 1120: 241-252.

RESEARCH USE

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

MONOS Satisfaction Guaranteed

Try **Ran GAP1 (C-5): sc-28322**, our highly recommended monoclonal alternative to Ran GAP1 (H-180).