SANTA CRUZ BIOTECHNOLOGY, INC.

Ran GAP1 (C-5): sc-28322

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 (C-5) is a mouse monoclonal antibody raised against amino acids 408-587 of Ran GAP1 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 GAP1 (C-5) is available conjugated to agarose (sc-28322 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-28322 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-28322 PE), fluorescein (sc-28322 FITC), Alexa Fluor® 488 (sc-28322 AF488), Alexa Fluor® 546 (sc-28322 AF546), Alexa Fluor® 594 (sc-28322 AF594) or Alexa Fluor® 647 (sc-28322 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-28322 AF680) or Alexa Fluor® 790 (sc-28322 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Ran GAP1 (C-5) is recommended for detection of Ran GAP1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1,000), 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).

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.

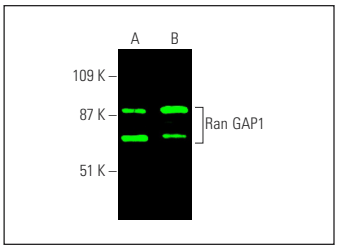
Molecular Weight of cytoplasmic Ran GAP1: 70 kDa.

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

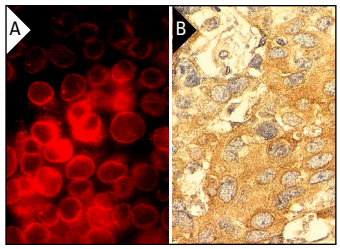
STORAGE

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

DATA



Ran GAP1 (C-5): sc-28322. Near-infrared western blot analysis of Ran GAP1 expression in HEK293T (**A**) and NTERA-2 cl.D1 (**B**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 680: sc-516180.



Ran GAP1 (C-5): sc-28322. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear envelope localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human breast tumor tissue showing cytoplasmic localization (**B**).

SELECT PRODUCT CITATIONS

1. Marín, M.P., et al. 2008. Chronic ethanol exposure induces alterations in the nucleocytoplasmic transport in growing astrocytes. J. Neurochem. 106: 1914-1928.
2. Murawala, P., et al. 2009. Nup358 interacts with APC and plays a role in cell polarization. J. Cell Sci. 122: 3113-3122.
3. Wang, P., et al. 2009. Repression of classical nuclear export by S-nitrosylation of CRM1. J. Cell Sci. 122: 3772-3779.
4. Lopitz-Otsoa, F., et al. 2012. Integrative analysis of the ubiquitin proteome isolated using tandem ubiquitin binding entities (TUBEs). J. Proteomics 75: 2998-3014.
5. Hori, K., et al. 2012. Vasopressin V1a receptor is required for nucleocytoplasmic transport of mineralocorticoid receptor. Am. J. Physiol. Renal Physiol. 303: F1080-F1088.
6. Chang, K.C., et al. 2013. Ran GTPase-activating protein 1 is a therapeutic target in diffuse large B-cell lymphoma. PLoS ONE 8: e79863.
7. Sohn, S.Y., et al. 2015. Proteomic analysis of ubiquitin-like posttranslational modifications induced by the adenovirus E4-ORF3 protein. J. Virol. 89: 1744-1755.
8. Dai, Y.H., et al. 2016. ON 01910.Na inhibits growth of diffuse large B-cell lymphoma by cytoplasmic sequestration of sumoylated C-MYB/TRAF6 complex. Transl. Res. 175: 129-143.
9. Khuperkar, D., et al. 2017. Selective recruitment of nucleoporins on vaccinia virus factories and the role of Nup358 in viral infection. Virology 512: 151-160.
10. Lapaquette, P., et al. 2017. Shigella entry unveils a calcium/calpain-dependent mechanism for inhibiting sumoylation. Elife 6: e27444.

RESEARCH USE

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