

Rho B (C-5): sc-8048

BACKGROUND

The Ras p21 family of guanine nucleotide proteins has been widely studied in view of its apparent role in signal transduction pathways and high frequency of mutations in human malignancies. It is now clear, however, that the Ras proteins (H-, K- and N-Ras p21) are members of a much larger superfamily of related proteins. Six members of this family, Rap 1A, Rap 1B, Rap 2, R-Ras, Ral A and Ral B, exhibit approximately 50% amino acid homology to Ras. The five mammalian Rho proteins (Rho A, B, C, 7 and 8) are approximately 30% homologous to Ras and are expressed in a wide range of cell types. Both Ras p21 and Rho p21, as well as other members of the Ras superfamily, contain a carboxy terminal CAAX sequence (C, cysteine; A, aliphatic amino acid; X, any amino acid) which in the case of Ras has been shown to be essential for correct localization and function.

REFERENCES

1. Liu, A.X., et al. 2001. Rho B is dispensable for mouse development, but it modifies susceptibility to tumor formation as well as cell adhesion and growth factor signaling in transformed cells. *Mol. Cell. Biol.* 21: 6906-6912.
2. Liu, A., et al. 2001. Rho B is required to mediate apoptosis in neoplastically transformed cells after DNA damage. *Proc. Natl. Acad. Sci. USA* 98: 6192-6197.

CHROMOSOMAL LOCATION

Genetic locus: RHOB (human) mapping to 2p24.1; Rhob (mouse) mapping to 12 A1.1.

SOURCE

Rho B (C-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 115-139 within an internal region of Rho B 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.

Rho B (C-5) is available conjugated to agarose (sc-8048 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-8048 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-8048 PE), fluorescein (sc-8048 FITC), Alexa Fluor® 488 (sc-8048 AF488), Alexa Fluor® 546 (sc-8048 AF546), Alexa Fluor® 594 (sc-8048 AF594) or Alexa Fluor® 647 (sc-8048 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-8048 AF680) or Alexa Fluor® 790 (sc-8048 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-8048 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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STORAGE

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

APPLICATIONS

Rho B (C-5) is recommended for detection of Rho B p21 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

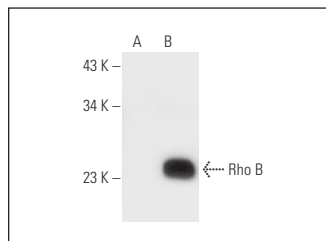
Rho B (C-5) is also recommended for detection of Rho B p21 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Rho B siRNA (h): sc-29472, Rho B siRNA (m): sc-36415, Rho B siRNA (r): sc-270195, Rho B shRNA Plasmid (h): sc-29472-SH, Rho B shRNA Plasmid (m): sc-36415-SH, Rho B shRNA Plasmid (r): sc-270195-SH, Rho B shRNA (h) Lentiviral Particles: sc-29472-V, Rho B shRNA (m) Lentiviral Particles: sc-36415-V and Rho B shRNA (r) Lentiviral Particles: sc-270195-V.

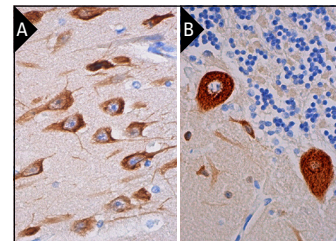
Molecular Weight of Rho B: 25 kDa.

Positive Controls: Rho B (m): 293T Lysate: sc-123117, HeLa whole cell lysate: sc-2200 or NIH/3T3 whole cell lysate: sc-2210.

DATA



Rho B (C-5): sc-8048. Western blot analysis of Rho B expression in non-transfected 293T: sc-117752 (A) and mouse Rho B transfected 293T: sc-123117 (B) whole cell lysates.



Rho B (C-5): sc-8048. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebral cortex tissue showing cytoplasmic staining of neuronal cells (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebellum tissue showing cytoplasmic staining of Purkinje cell and cells in molecular layer (B).

SELECT PRODUCT CITATIONS

1. Gampel, A., et al. 2002. Small interfering RNAs as a tool to assign Rho GTPase exchange-factor function *in vivo*. *Biochem. J.* 366: 393-398.
2. Liu, M., et al. 2018. ATR/Chk1 signaling induces autophagy through sumoylated Rho B-mediated lysosomal translocation of TSC2 after DNA damage. *Nat. Commun.* 9: 4139.
3. Zaoui, K., et al. 2019. Arf6 regulates Rho B subcellular localization to control cancer cell invasion. *J. Cell Biol.* 218: 3812-3826.
4. Moorthy, S., et al. 2020. Matrix stiffness regulates endosomal escape of uropathogenic *E. coli*. *Cell. Microbiol.* 22: e13196.

RESEARCH USE

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