

Rab 21 (B16K): sc-81917

BACKGROUND

The Ras-related superfamily of guanine nucleotide binding proteins includes the R-Ras, Rap, Ral/Rec and Rho/Rab subfamilies. Increasing data suggests an important role for Rab proteins in either endocytosis or in biosynthetic protein transport. The process of transporting newly synthesized proteins from the endoplasmic reticulum to various stacks of the Golgi complex and to secretory vesicles involves the movement of carrier vesicles and requires Rab protein function. Rab proteins are also an integral part of endocytic pathways. Rab 21 is a ubiquitously expressed member of the Rab family of proteins and localizes to the Golgi membrane, where it participates in endosomal trafficking of integrins. More specifically, Rab 21 associates with the cytoplasmic domains of Integrin α chains and is essential for integrin-mediated cell motility and cell adhesion. The overexpression of Rab 21 induces the endosomal traffic of integrins and promotes cell migration and cancer cell adhesion.

REFERENCES

- Opdam, F.J., et al. 2000. Expression of Rab small GTPases in epithelial Caco-2 cells: Rab 21 is an apically located GTP-binding protein in polarised intestinal epithelial cells. *Eur. J. Cell Biol.* 79: 308-316.
- Simpson, J.C., et al. 2004. A role for the small GTPase Rab 21 in the early endocytic pathway. *J. Cell Sci.* 117: 6297-6311.

CHROMOSOMAL LOCATION

Genetic locus: RAB21 (human) mapping to 12q21.1; Rab21 (mouse) mapping to 10 D2.

SOURCE

Rab 21 (B16K) is a mouse monoclonal antibody raised against recombinant Rab 21 of human origin.

PRODUCT

Each vial contains 100 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Rab 21 (B16K) is recommended for detection of Rab 21 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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 Rab 21 siRNA (h): sc-76322, Rab 21 siRNA (m): sc-76323, Rab 21 shRNA Plasmid (h): sc-76322-SH, Rab 21 shRNA Plasmid (m): sc-76323-SH, Rab 21 shRNA (h) Lentiviral Particles: sc-76322-V and Rab 21 shRNA (m) Lentiviral Particles: sc-76323-V.

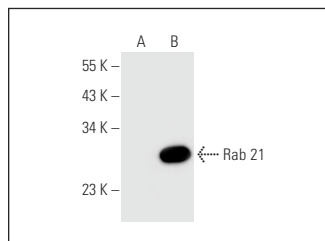
Molecular Weight of Rab 21: 25 kDa.

Positive Controls: Rab 21 (m): 293T Lysate: sc-122885 or HeLa whole cell lysate: sc-2200.

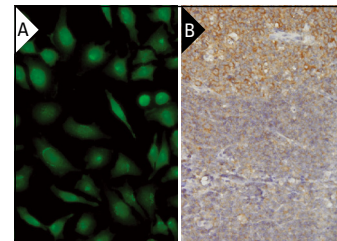
STORAGE

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

DATA



Rab 21 (B16K): sc-81917. Western blot analysis of Rab 21 expression in non-transfected: sc-117752 (A) and mouse Rab 21 transfected: sc-122885 (B) 293T whole cell lysates.



Rab 21 (B16K): sc-81917. Immunofluorescence staining of paraformaldehyde-fixed HeLa cells showing nuclear and cytoplasmic localization (A) and immunoperoxidase staining of formalin-fixed, paraffin-embedded human tonsil tissue showing cytoplasmic localization (B).

SELECT PRODUCT CITATIONS

- Hooper, S., et al. 2010. A chemical biology screen reveals a role for Rab 21-mediated control of actomyosin contractility in fibroblast-driven cancer invasion. *Br. J. Cancer* 102: 392-402.
- Xiao, S., et al. 2014. MiR-135b contributes to the radioresistance by targeting GSK3 β in human glioblastoma multiforme cells. *PLoS ONE* 9: e108810.
- Silva, P., et al. 2016. Hypoxia promotes Rab 5 activation, leading to tumor cell migration, invasion and metastasis. *Oncotarget* 7: 29548-29562.
- Zhu, X., et al. 2019. Effects of miR-340 overexpression and knockdown on the proliferation and metastasis of NSCLC cell lines. *Int. J. Mol. Med.* 44: 643-651.
- Yousaf, M., et al. 2020. Modulation of ABCG2 surface expression by Rab 5 and Rab 21 to overcome multi drug resistance in cancer cells. *Xenobiotica* 50: 988-996.
- Luo, L., et al. 2023. MFN2 suppresses clear cell renal cell carcinoma progression by modulating mitochondria-dependent dephosphorylation of EGFR. *Cancer Commun.* 43: 808-833.
- Benwell, C.J., et al. 2024. A proteomics approach to isolating neuropilin-dependent α 5 integrin trafficking pathways: neuropilin 1 and 2 co-traffic α 5 integrin through endosomal p120RasGAP to promote polarised fibronectin fibrillogenesis in endothelial cells. *Commun. Biol.* 7: 629.
- Kim, J.E., et al. 2024. Glucose-mediated mitochondrial reprogramming by cholesterol export at TM4SF5-enriched mitochondria-lysosome contact sites. *Cancer Commun.* 44: 47-75.
- Yao, Y., et al. 2024. NHE7 upregulation potentiates the uptake of small extracellular vesicles by enhancing maturation of macropinosomes in hepatocellular carcinoma. *Cancer Commun.* 44: 251-272.

RESEARCH USE

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