

Rab 21 siRNA (m): sc-76323

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

1. 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.
2. 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.
3. Khurana, T., et al. 2005. A Rab 21/LIM-only/CH-LIM complex regulates phagocytosis via both activating and inhibitory mechanisms. *EMBO J.* 24: 2254-2264.
4. Pellinen, T., et al. 2006. Small GTPase Rab 21 regulates cell adhesion and controls endosomal traffic of β 1-integrins. *J. Cell Biol.* 173: 767-780.
5. Zhang, X., et al. 2006. Varp is a Rab 21 guanine nucleotide exchange factor and regulates endosome dynamics. *J. Cell Sci.* 119: 1053-1062.
6. Zhu, G., et al. 2007. Structure of the APPL1 BAR-PH domain and characterization of its interaction with Rab 5. *EMBO J.* 26: 3484-3493.
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CHROMOSOMAL LOCATION

Genetic locus: Rab21 (mouse) mapping to 10 D2.

PRODUCT

Rab 21 siRNA (m) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Rab 21 shRNA Plasmid (m): sc-76323-SH and Rab 21 shRNA (m) Lentiviral Particles: sc-76323-V as alternate gene silencing products.

For independent verification of Rab 21 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-76323A, sc-76323B and sc-76323C.

RESEARCH USE

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

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNases and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

Rab 21 siRNA (m) is recommended for the inhibition of Rab 21 expression in mouse cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 μ M in 66 μ l. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

GENE EXPRESSION MONITORING

Rab 21 (B16K): sc-81917 is recommended as a control antibody for monitoring of Rab 21 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Rab 21 gene expression knockdown using RT-PCR Primer: Rab 21 (m)-PR: sc-76323-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.