

Rab 2A siRNA (h): sc-41810

BACKGROUND

The Ras-related superfamily of guanine nucleotide binding proteins includes the R-Ras, Rap, Ral/Rec and Rho/Rab subfamilies all of which are thought to play an important role in either endocytosis or in biosynthetic protein transport. The process of transporting newly synthesized proteins from the endoplasmic reticulum (ER) 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 2A (Ras-related protein Rab-2A) and Rab 2B (Ras-related protein Rab-2B) are 212 and 216 amino acid proteins, respectively, that belong to the Ras-related GTPase superfamily. While both Rab 2A and Rab 2B are required for protein transport from the ER to the Golgi, Rab 2A is lipid-anchored to the ER-Golgi intermediate compartment membrane while Rab 2B is lipid anchored to the cytoplasmic side of the cell membrane.

REFERENCES

1. Opdam, F.J., et al. 2000. Expression of Rab small GTPases in epithelial Caco-2 cells: Rab21 is an apically located GTP-binding protein in polarised intestinal epithelial cells. *Eur. J. Cell Biol.* 79: 308-316.
2. Ni, X., et al. 2002. Molecular cloning and characterization of a novel human Rab (Rab 2B) gene. *J. Hum. Genet.* 47: 548-551.
3. Online Mendelian Inheritance in Man, OMIM[™]. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 179509. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
4. Ali, B.R., et al. 2004. Multiple regions contribute to membrane targeting of Rab GTPases. *J. Cell Sci.* 117: 6401-6412.

CHROMOSOMAL LOCATION

Genetic locus: RAB2A (human) mapping to 8q12.1.

PRODUCT

Rab 2A siRNA (h) 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 2A shRNA Plasmid (h): sc-41810-SH and Rab 2A shRNA (h) Lentiviral Particles: sc-41810-V as alternate gene silencing products.

For independent verification of Rab 2A (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-41810A, sc-41810B and sc-41810C.

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 2A siRNA (h) is recommended for the inhibition of Rab 2A expression in human 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 2A (H-5): sc-515612 is recommended as a control antibody for monitoring of Rab 2A 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 2A gene expression knockdown using RT-PCR Primer: Rab 2A (h)-PR: sc-41810-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Fugier, E., et al. 2009. The glyceraldehyde-3-phosphate dehydrogenase and the small GTPase Rab 2 are crucial for *Brucella* replication. *PLoS Pathog.* 5: e1000487.

RESEARCH USE

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

PROTOCOLS

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