

Rab 23 siRNA (m): sc-152630

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 23, also known as HSPC137, is a 237 amino acid member of the Rab family of proteins and localizes to the cytoplasmic side of the cell membrane. Rab 23 is believed to play a role in intracellular protein transport and signal transduction mediated by small GTPases. Mutations in the gene encoding Rab 23 may result in Carpenter syndrome, also known as ACP2 (acrocephalopolysyndactyly type 2), a condition characterized by obesity, cardiac defects, polysyndactyly and craniosynostosis.

REFERENCES

1. Günther, T., et al. 1994. Open brain, a new mouse mutant with severe neural tube defects, shows altered gene expression patterns in the developing spinal cord. *Development* 120: 3119-3130.
2. Zhang, Q.H., et al. 2000. Cloning and functional analysis of cDNAs with open reading frames for 300 previously undefined genes expressed in CD34⁺ hematopoietic stem/progenitor cells. *Genome Res.* 10: 1546-1560.
3. Eggenschwiler, J.T., et al. 2001. Rab23 is an essential negative regulator of the mouse Sonic hedgehog signalling pathway. *Nature* 412: 194-198.
4. Online Mendelian Inheritance in Man, OMIM[™]. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 606144. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
5. Jenkins, D., et al. 2007. RAB23 mutations in Carpenter syndrome imply an unexpected role for hedgehog signaling in cranial-suture development and obesity. *Am. J. Hum. Genet.* 80: 1162-1170.
6. Li, N., et al. 2007. Rab23 GTPase is expressed asymmetrically in Hensen's node and plays a role in the dorsoventral patterning of the chick neural tube. *Dev. Dyn.* 236: 2993-3006.

CHROMOSOMAL LOCATION

Genetic locus: Rab23 (mouse) mapping to 1 B.

PRODUCT

Rab 23 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 23 shRNA Plasmid (m): sc-152630-SH and Rab 23 shRNA (m) Lentiviral Particles: sc-152630-V as alternate gene silencing products.

For independent verification of Rab 23 (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-152630A, sc-152630B and sc-152630C.

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 23 siRNA (m) is recommended for the inhibition of Rab 23 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 23 (427CT2.1.1): sc-517357 is recommended as a control antibody for monitoring of Rab 23 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Rab 23 gene expression knockdown using RT-PCR Primer: Rab 23 (m)-PR: sc-152630-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

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.