SANTA CRUZ BIOTECHNOLOGY, INC.

Rab L4 siRNA (h): sc-76330

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 L4 (Rab, member RAS oncogene family-like 4) is a 186 amino acid protein that belongs to the Rab family of guanine nucleotide binding proteins, suggesting a role in protein transport. The gene encoding Rab L4 maps to human chromosome 22, which houses over 500 genes and is the second smallest human chromosome. Mutations in several of the genes that map to chromosome 22 are involved in the development of Phelan-McDermid syndrome, neurofibromatosis type 2, autism and schizophrenia.

REFERENCES

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2. Chen, D., et al. 1997. RAB GTPases expressed in human melanoma cells. Biochim. Biophys. Acta 1355: 1-6.
3. 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.
4. Ali, B.R., et al. 2004. Multiple regions contribute to membrane targeting of Rab GTPases. J. Cell Sci. 117: 6401-6412.
5. Chakrabarty, K. and Heumann, R. 2008. Prospective of Ras signaling in stem cells. Biol. Chem. 389: 791-798.
6. Fukuda, M., et al. 2008. Large scale screening for novel rab effectors reveals unexpected broad Rab binding specificity. Mol. Cell. Proteomics 7: 1031-1042.

CHROMOSOMAL LOCATION

Genetic locus: IFT27 (human) mapping to 22q12.3.

PRODUCT

Rab L4 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Rab L4 shRNA Plasmid (h): sc-76330-SH and Rab L4 shRNA (h) Lentiviral Particles: sc-76330-V as alternate gene silencing products.

For independent verification of Rab L4 (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-76330A, sc-76330B and sc-76330C.

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 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

Rab L4 siRNA (h) is recommended for the inhibition of Rab L4 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 µM in 66 µl. 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Rab L4 gene expression knockdown using RT-PCR Primer: Rab L4 (h)-PR: sc-76330-PR (20 µl). 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.