SANTA CRUZ BIOTECHNOLOGY, INC.

Rab 7b siRNA (m): sc-106473

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 7b is a member of the Rab family of proteins and shares high homology (65% similarity) with Rab 7, a Rab GTPase that regulates vesicular traffic in the endocytic pathway. Expressed in lung, placenta, skeletal muscle, heart and peripheral blood leukocytes, Rab 7b is believed to play a role in the regulation of monocyte functions, including endocytosis and presentation of protein antigens. In addition, Rab 7b is phosphorylated by PKC and casein kinase II and is presumed to function as a Rab GTPase.

REFERENCES

1. Ohsumi, K., et al. 2002. Cloning and characterization of a gene (avaA) from *Aspergillus nidulans* encoding a small GTPase involved in vacuolar biogenesis. Gene 291: 77-84.
2. Yang, M., et al. 2004. Rab 7b, a novel lysosome-associated small GTPase, is involved in monocytic differentiation of human acute promyelocytic leukemia cells. Biochem. Biophys. Res. Commun. 318: 792-799.
3. Dou, T., et al. 2005. Cloning and characterization of a novel splice variant of human Rab 18 gene (RAB18). DNA Seq. 16: 230-234.
4. Gregory, S.G., et al. 2006. The DNA sequence and biological annotation of human chromosome 1. Nature 441: 315-321.
5. Surmacz, L., et al. 2006. Cloning of two genes encoding Rab7 in *Paramecium*. Acta Biochim. Pol. 53: 149-156.
6. Wang, Y., et al. 2007. Lysosome-associated small Rab GTPase Rab7b negatively regulates TLR4 signaling in macrophages by promoting lysosomal degradation of TLR4. Blood 110: 962-971.

CHROMOSOMAL LOCATION

Genetic locus: 5430435G22Rik (mouse) mapping to 1 E4.

PRODUCT

Rab 7b 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Rab 7b shRNA Plasmid (m): sc-106473-SH and Rab 7b shRNA (m) Lentiviral Particles: sc-106473-V as alternate gene silencing products.

For independent verification of Rab 7b (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-106473A, sc-106473B and sc-106473C.

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 7b siRNA (m) is recommended for the inhibition of Rab 7b 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 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 7b gene expression knockdown using RT-PCR Primer: Rab 7b (m)-PR: sc-106473-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.