SANTA CRUZ BIOTECHNOLOGY, INC.

Rab 22A siRNA (h): sc-76324

BACKGROUND

The Ras-related superfamily of guanine nucleotide binding proteins, which includes the R-Ras, Rap, Ral/Rec and Rho/Rab superfamilies, exhibit 30-60% homology with Ras p21. Accumulating data suggests an important role for Rab proteins, either in endocytosis or in biosynthetic protein transport. The transport of newly synthesized proteins from the endoplasmic reticulum to various stacks of the Golgi complex and to secretory vesicles involves at each stage the movement of carrier vesicles, a process that appears to involve Rab protein function. Rab 22A, also known as MGC16770, is a 194 amino acid protein that acts as a lipid anchor at endosomal and cellular membranes. Rab 22A binds early-endosomal antigen 1 (EEA1), and likely assists in trafficking between endosomes and the Golgi apparatus. The gene encoding Rab 22A maps to human chromosome 20q13.32.

REFERENCES

1. Olkkonen, V.M., et al. 1993. Molecular cloning and subcellular localization of three GTP-binding proteins of the Rab subfamily. J. Cell Sci. 106: 1249-1261.
2. Chen, D., et al. 1997. RAB GTPases expressed in human melanoma cells. Biochim. Biophys. Acta 1355: 1-6.
3. Kauppi, M., et al. 2002. The small GTPase Rab 22 interacts with EEA1 and controls endosomal membrane trafficking. J. Cell Sci. 115: 899-911.
4. Zhao, H., et al. 2002. Intracellular membrane trafficking pathways in bone-resorbing osteoclasts revealed by cloning and subcellular localization studies of small GTP-binding rab proteins. Biochem. Biophys. Res. Commun. 293: 1060-1065.
5. Mesa, R., et al. 2005. Overexpression of Rab 22A hampers the transport between endosomes and the Golgi apparatus. Exp. Cell Res. 304: 339-353.
6. Magadán, J.G., et al. 2006. Rab 22A regulates the sorting of transferrin to recycling endosomes. Mol. Cell. Biol. 26: 2595-2614.
7. Echard, A. 2008. Membrane traffic and polarization of lipid domains during cytokinesis. Biochem. Soc. Trans. 36: 395-399.

CHROMOSOMAL LOCATION

Genetic locus: RAB22A (human) mapping to 20q13.32.

PRODUCT

Rab 22A siRNA (h) is a target-specific 19-25 nt siRNA 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 22A shRNA Plasmid (h): sc-76324-SH and Rab 22A shRNA (h) Lentiviral Particles: sc-76324-V as alternate gene silencing products.

PROTOCOLS

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

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 22A siRNA (h) is recommended for the inhibition of Rab 22A 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.

GENE EXPRESSION MONITORING

Rab 22A (G-7): sc-390726 is recommended as a control antibody for monitoring of Rab 22A 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 22A gene expression knockdown using RT-PCR Primer: Rab 22A (h)-PR: sc-76324-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Su, F., et al. 2016. Rab 22A overexpression promotes the tumor growth of melanoma. Oncotarget 7: 71744-71753.

RESEARCH USE

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