SANTA CRUZ BIOTECHNOLOGY, INC.

Rab 12 siRNA (h): sc-76311

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 12 is a 244 amino acid protein that is anchored to the membrane of the Golgi apparatus and belongs to the Rab family of GTPase proteins. Like other Rab proteins, Rab 12 is thought to play a role in protein transport and may participate in vesicular trafficking events.

REFERENCES

1. Elferink, L.A., Anzai, K. and Scheller, R.H. 1992. Rab 15, a novel low molecular weight GTP-binding protein specifically expressed in rat brain. J. Biol. Chem. 267: 5768-5775.
2. Olkkonen, V.M., Dupree, P., Killisch, I., Lütcke, A., Zerial, M. and Simons, K. 1993. Molecular cloning and subcellular localization of three GTP-binding proteins of the Rab subfamily. J. Cell Sci. 106: 1249-1261.
3. Iida, H., Wang, L., Nishii, K., Ookuma, A. and Shibata, Y. 1996. Identification of Rab 12 as a secretory granule-associated small GTP-binding protein in atrial myocytes. Circ. Res. 78: 343-347.
4. Ishido, M. and Masuo, Y. 2004. Transcriptome of pituitary adenylate cyclase-activating polypeptide-differentiated PC12 cells. Regul. Pept. 123: 15-21.
5. Iida, H., Noda, M., Kaneko, T., Doiguchi, M. and Mori, T. 2005. Identification of Rab 12 as a vesicle-associated small GTPase highly expressed in Sertoli cells of rat testis. Mol. Reprod. Dev. 71: 178-185.
6. Chakrabarty, K. and Heumann, R. 2008. Prospective of Ras signaling in stem cells. Biol. Chem. 389: 791-798.
7. Carriere, A., Ray, H., Blenis, J. and Roux, P.P. 2008. The RSK factors of activating the Ras/MAPK signaling cascade. Front. Biosci. 13: 4258-4275.

CHROMOSOMAL LOCATION

Genetic locus: RAB12 (human) mapping to 18p11.22.

PRODUCT

Rab 12 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 12 shRNA Plasmid (h): sc-76311-SH and Rab 12 shRNA (h) Lentiviral Particles: sc-76311-V as alternate gene silencing products.

For independent verification of Rab 12 (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-76311A, sc-76311B and sc-76311C.

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 12 siRNA (h) is recommended for the inhibition of Rab 12 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 12 (H-11): sc-515613 is recommended as a control antibody for monitoring of Rab 12 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 12 gene expression knockdown using RT-PCR Primer: Rab 12 (h)-PR: sc-76311-PR (20 µl, 508 bp). 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.