



Rabenosyn-5 siRNA (h): sc-76333

BACKGROUND

Zinc-finger proteins contain DNA-binding domains and have a wide variety of functions, most of which encompass some form of transcriptional activation or repression. Rabenosyn-5, also known as ZFYVE20 (zinc finger, FYVE domain containing 20), is a 784 amino acid cell membrane protein that contains a C₂H₂-type zinc finger, a FYVE-type zinc finger and a ubiquitin-interacting motif (UIM repeat). The FYVE domain is a cysteine-rich domain of about 70 amino acids. Its primary role is to target signal-transducing proteins to cell membranes through binding to the membrane lipid PIP3 (phosphatidylinositol-3-phosphate) with high specificity. Considered an effector protein, Rabenosyn-5 is required for endosome fusion either homotypically or with clathrin coated vesicles and is involved in the lysosomal trafficking of cathepsin D from the Golgi to lysosomes. Rabenosyn-5 promotes the recycling of transferrin directly from early endosomes to the plasma membrane and binds phospholipid vesicles containing PIP3.

REFERENCES

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3. de Renzis, S., et al. 2002. Divalent Rab effectors regulate the sub-compartmental organization and sorting of early endosomes. *Nat. Cell Biol.* 4: 124-133.
4. Naslavsky, N., et al. 2004. Rabenosyn-5 and EHD1 interact and sequentially regulate protein recycling to the plasma membrane. *Mol. Biol. Cell* 15: 2410-2422.
5. Eathiraj, S., et al. 2005. Structural basis of family-wide Rab GTPase recognition by Rabenosyn-5. *Nature* 436: 415-419.
6. Gengyo-Ando, K., et al. 2007. The SM protein VPS-45 is required for RAB-5-dependent endocytic transport in *Caenorhabditis elegans*. *EMBO Rep.* 8: 152-157.
7. Hayakawa, A., et al. 2007. Evolutionarily conserved structural and functional roles of the FYVE domain. *Biochem. Soc. Symp.* 74: 95-105.
8. Fichtman, B., et al. 2008. EHDS are serine phosphoproteins: EHD1 phosphorylation is enhanced by serum stimulation. *Cell. Mol. Biol. Lett.* 13: 632-648.
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CHROMOSOMAL LOCATION

Genetic locus: ZFYVE20 (human) mapping to 3p25.1.

PROTOCOLS

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

PRODUCT

Rabenosyn-5 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Rabenosyn-5 shRNA Plasmid (h): sc-76333-SH and Rabenosyn-5 shRNA (h) Lentiviral Particles: sc-76333-V as alternate gene silencing products.

For independent verification of Rabenosyn-5 (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-76333A, sc-76333B and sc-76333C.

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

Rabenosyn-5 siRNA (h) is recommended for the inhibition of Rabenosyn-5 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 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Rabenosyn-5 gene expression knockdown using RT-PCR Primer: Rabenosyn-5 (h)-PR: sc-76333-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.