SANTA CRUZ BIOTECHNOLOGY, INC.

GUP1 siRNA (h): sc-78153

BACKGROUND

GUP1 (Glycerol uptake/transporter homolog), also designated Protein-cysteine N-palmitoyltransferase HHAT-like protein or Hedgehog acyltransferase-like protein, is a 504 amino acid multipass membrane protein of the endoplasmic reticulum that functions as a membrane bound O-acyltransferase. With specific expression in heart, GUP1 negatively regulates amino-terminal palmitoylation of Shh by HHAT, a protein that is required for Shh signaling. Deletion of the gene encoding GUP1 results in higher sensibility to specific sphinogolipid biosynthesis inhibitors and resistance to ergosterol biosynthesis inhibitors, indicating that GUP1 is an essential component in lipid metabolism. Also, GUP1 also seems to be important for cell wall assembly and stability due to evidence in *Saccharomyces cerevisiae* GUP1 mutants, which exhibit altered plasma membrane lipid composition and membrane potential.

REFERENCES

1. Hirosawa, M., et al. 1999. Characterization of cDNA clones selected by the GeneMark analysis from size-fractionated cDNA libraries from human brain. DNA Res. 6: 329-336.
2. Holst, B., et al. 2000. GUP1 and its close homologue GUP2, encoding multimembrane-spanning proteins involved in active glycerol uptake in *Saccharomyces cerevisiae*. Mol. Microbiol. 37: 108-124.
3. Soejima, H., et al. 2001. Isolation of novel heart-specific genes using the BodyMap database. Genomics 74: 115-120.
4. Oliveira, R. and Lucas, C. 2004. Expression studies of GUP1 and GUP2, genes involved in glycerol active transport in *Saccharomyces cerevisiae*, using semi-quantitative RT-PCR. Curr. Genet. 46: 140-146.
5. Ferreira, C., et al. 2006. Absence of Gup1p in *Saccharomyces cerevisiae* results in defective cell wall composition, assembly, stability and morphology. FEMS Yeast Res. 6: 1027-1038.
6. Bosson, R., et al. 2006. GUP1 of *Saccharomyces cerevisiae* encodes an O-acyltransferase involved in remodeling of the GPI anchor. Mol. Biol. Cell 17: 2636-2645.

CHROMOSOMAL LOCATION

Genetic locus: HHATL (human) mapping to 3p22.1.

PRODUCT

GUP1 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 GUP1 shRNA Plasmid (h): sc-78153-SH and GUP1 shRNA (h) Lentiviral Particles: sc-78153-V as alternate gene silencing products.

For independent verification of GUP1 (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-78153A, sc-78153B and sc-78153C.

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

GUP1 siRNA (h) is recommended for the inhibition of GUP1 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 GUP1 gene expression knockdown using RT-PCR Primer: GUP1 (h)-PR: sc-78153-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.