SANTA CRUZ BIOTECHNOLOGY, INC.

Cdc50C siRNA (h): sc-78073

BACKGROUND

Containing between 1,100 and 1,500 genes, chromosome 3 spans 200 million base pairs and represents 6.5 percent of total DNA. Mapping to chromosome 3, the gene encoding Cdc50C (cell cycle control protein 50C), also known as Transmembrane protein 30C (TMEM30C), produces a 113 amino acid transmembrane protein that is specifically expressed in testis. In yeast, the Cdc50C homolog plays a role in cell polarity during division, suggesting that the human protein may be involved in spermatogenesis. Though the Cdc50C protein is evolutionarily highly conserved, in humans and chimpanzees the Cdc50C transcripts are truncated due to mutations in splicing or poly(A) signals relative to the Cdc50C gene of other species. In humans, this results in a major transcript that lacks a stop codon, therefore producing a non-functional protein, and a minor transcript that encodes a protein with 1 transmembrane domain. In mice, Cdc50C is expressed during meiosis and post-meiosis stages, further supporting the protein's role in sperm development.

REFERENCES

1. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 611030. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
2. Misu, K., et al. 2003. Cdc50p, a conserved endosomal membrane protein, controls polarized growth in Saccharomyces cerevisiae. Mol. Biol. Cell 14: 730-747.
3. Saito, K., et al. 2004. Cdc50p, a protein required for polarized growth, associates with the Drs2p P-type ATPase implicated in phospholipid translocation in Saccharomyces cerevisiae. Mol. Biol. Cell 15: 3418-3432.
4. Katoh, Y., et al. 2004. Identification and characterization of CDC50A, CDC50B and CDC50C genes in silico. Oncol. Rep. 12: 939-943.
5. Kishimoto, T., et al. 2005. Defects in structural integrity of ergosterol and the Cdc50p-Drs2p putative phospholipid translocase cause accumulation of endocytic membranes, onto which actin patches are assembled in yeast. Mol. Biol. Cell 16: 5592-5609.
6. Chen, S., et al. 2006. Roles for the Drs2p-Cdc50p complex in protein transport and phosphatidylserine asymmetry of the yeast plasma membrane. Traffic 7: 1503-1517.

CHROMOSOMAL LOCATION

Genetic locus: TMEM30C (human) mapping to 3q12.1.

PRODUCT

Cdc50C 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 Cdc50C shRNA Plasmid (h): sc-78073-SH and Cdc50C shRNA (h) Lentiviral Particles: sc-78073-V as alternate gene silencing products.

For independent verification of Cdc50C (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-78073A, sc-78073B and sc-78073C.

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

Cdc50C siRNA (h) is recommended for the inhibition of Cdc50C 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 Cdc50C gene expression knockdown using RT-PCR Primer: Cdc50C (h)-PR: sc-78073-PR (20 µl). 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.