SANTA CRUZ BIOTECHNOLOGY, INC.

PHTF1 siRNA (h): sc-78940

BACKGROUND

PHTF1 (putative homeodomain transcription factor 1), also known as PHTF, is a potential transcription regulator. It is a ubiquitously expressed integral, multipass membrane protein with predominant expression in testis. PHTF1 is associated with the ER (endoplasmic reticulum) and contains one bHLH (basic helix-loop-helix) domain. It is present in the cell during meiosis and spermiogenesis but, by the end of spermiogenesis, is released from the mature cell within the residual bodies. This implies that PHTF1 may play a role in the spermatozoa maturation process. In addition, PHTF1 is believed to interact with FEM1B and may be responsible for recruiting FEM1B to the surface of the ER membrane. This suggests that PHTF1 acts as a sequestering or anchoring protein for FEM1B. Two PHTF1 isoforms exist due to alternate splicing events. Isoform 2 is the shorter form and lacks the amino acid residues 648 to 762.

REFERENCES

1. Manuel, A., et al. 2000. Molecular characterization of a novel gene family (PHTF) conserved from *Drosophila* to mammals. Genomics 64: 216-220.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 604950. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Oyhenart, J., et al. 2003. PHTF1 is an integral membrane protein localized in an endoplasmic reticulum domain in maturing male germ cells. Biol. Reprod. 68: 1044-1053.
4. Oyhenart, J., et al. 2004. Expression, regulation, and immunolocalization of putative homeodomain transcription factor 1 (PHTF1) in rodent epididymis: evidence for a novel form resulting from proteolytic cleavage. Biol. Reprod. 72: 50-57.
5. Oyhenart, J., et al. 2005. Putative homeodomain transcription factor 1 interacts with the feminization factor homolog FEM1B in male germ cells. Biol. Reprod. 72: 780-787.
6. Natrajan, R., et al. 2007. Delineation of a 1Mb breakpoint region at 1p13 in Wilms tumors by fine-tiling oligonucleotide array CGH. Genes Chromosomes Cancer 46: 607-615.

CHROMOSOMAL LOCATION

Genetic locus: PHTF1 (human) mapping to 1p13.2.

PRODUCT

PHTF1 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 PHTF1 shRNA Plasmid (h): sc-78940-SH and PHTF1 shRNA (h) Lentiviral Particles: sc-78940-V as alternate gene silencing products.

For independent verification of PHTF1 (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-78940A, sc-78940B and sc-78940C.

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

PHTF1 siRNA (h) is recommended for the inhibition of PHTF1 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

PHTF1 (PHTF1R8): sc-81111 is recommended as a control antibody for monitoring of PHTF1 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor PHTF1 gene expression knockdown using RT-PCR Primer: PHTF1 (h)-PR: sc-78940-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.