SANTA CRUZ BIOTECHNOLOGY, INC.

LETM2 siRNA (h): sc-77728

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

LETM2 (leucine zipper-EF-hand containing transmembrane protein 2) is a 491 amino acid protein that is localized to the mitochondrial membrane and contains one LETM1 domain. Despite its name, LETM2, which is preferentially expressed in sperm and testis, does not contain any EF-hand domains. There are four isoforms of LETM2 that are produced as a result of alternative splicing events. A homolog of LETM2, LETM1 is thought to be involved in maintaining normal mitochondrial function and overall cell viability. Deletions in the gene encoding LETM1 are associated with Wolf-Hirschhorn syndrome (WHS), a congenital syndrome characterized by a number of abnormalities, including mental retardation, seizures, heart defects, fused teeth, hearing loss, a webbed neck and renal abnormalities. The LETM2 gene is located on chromosome 8, which is made up of nearly 146 million bases and encodes about 800 genes.

REFERENCES

1. Endele, S., et al. 1999. LETM1, a novel gene encoding a putative EF-hand Ca^{2+}-binding protein, flanks the Wolf-Hirschhorn syndrome (WHS) critical region and is deleted in most WHS patients. Genomics 60: 218-225.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 604407. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Zollino, M., et al. 2003. Mapping the Wolf-Hirschhorn syndrome phenotype outside the currently accepted WHS critical region and defining a new critical region, WHSCR-2. Am. J. Hum. Genet. 72: 590-597.
4. Schlickum, S., et al. 2004. LETM1, a gene deleted in Wolf-Hirschhorn syndrome, encodes an evolutionarily conserved mitochondrial protein. Genomics 83: 254-261.
5. Nowikovsky, K., et al. 2004. The LETM1/YOL027 gene family encodes a factor of the mitochondrial K^+ homeostasis with a potential role in the Wolf-Hirschhorn syndrome. J. Biol. Chem. 279: 30307-30315.
6. South, S.T., et al. 2007. Two unique patients with novel microdeletions in 4p16.3 that exclude the WHS critical regions: implications for critical region designation. Am. J. Med. Genet. A 143A: 2137-2142.

CHROMOSOMAL LOCATION

Genetic locus: LETM2 (human) mapping to 8p11.23.

PRODUCT

LETM2 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 LETM2 shRNA Plasmid (h): sc-77728-SH and LETM2 shRNA (h) Lentiviral Particles: sc-77728-V as alternate gene silencing products.

For independent verification of LETM2 (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-77728A, sc-77728B and sc-77728C.

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

LETM2 siRNA (h) is recommended for the inhibition of LETM2 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 LETM2 gene expression knockdown using RT-PCR Primer: LETM2 (h)-PR: sc-77728-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.