SANTA CRUZ BIOTECHNOLOGY, INC.

SLC25A20 siRNA (h): sc-78217

BACKGROUND

SLC25A20 (solute carrier family 25 (carnitine/acylcarnitine translocase), member 20) is a 301 amino acid multi-pass membrane protein that belongs to the mitochondrial carrier family. Containing three Solcar repeats, SLC25A20 mediates the transport of acylcarnitines of different length across the mitochondrial inner membrane from the cytosol to the mitochondrial matrix for their oxidation by the mitochondrial fatty acid-oxidation pathway. Defects in SLC25A20 are the cause of carnitine-acylcarnitine translocase deficiency (CACT deficiency), which is an autosomal recessive deficiency in mitochondrial oxidation of fatty acids. It is usually lethal within a few hours or days after birth. Symptoms characterizing its normally severe clinical phenotype include fatty hepatomegaly with abnormal liver function, cardiomyopathy, muscle weakness and episodes of life-threatening coma, which eventually lead to death. The SLC25A20 gene is conserved in chimpanzee, bovine, mouse, rat, zebrafish, fruit fly, mosquito, *C. elegans*, *S. cerevisiae*, *K. lactis*, *E. gossypii*, *M. grisea*, *N. crassa*, *A. thaliana* and rice, and maps to human chromosome 3p21.31.

REFERENCES

1. Huizing, M., et al. 1997. Cloning of the human carnitine-acylcarnitine carrier cDNA and identification of the molecular defect in a patient. Am. J. Hum. Genet. 61: 1239-1245.
2. Iacobazzi, V., et al. 1998. The structure and organization of the human carnitine/acylcarnitine translocase (CACT1) gene2. Biochem. Biophys. Res. Commun. 252: 770-774.
3. Huizing, M., et al. 1998. Carnitine-acylcarnitine carrier deficiency: identification of the molecular defect in a patient. J. Inherit. Metab. Dis. 21: 262-267.
4. Costa, C., et al. 1999. Identification of the molecular defect in a severe case of carnitine-acylcarnitine carrier deficiency. J. Inherit. Metab. Dis. 22: 267-270.
5. Ogawa, A., et al. 2000. Identification of two novel mutations of the carnitine/acylcarnitine translocase (CACT) gene in a patient with CACT deficiency. J. Hum. Genet. 45: 52-55.
6. Al Aqeel, A.I., et al. 2003. A novel molecular defect of the carnitine acylcarnitine translocase gene in a Saudi patient. Clin. Genet. 64: 163-165.

CHROMOSOMAL LOCATION

Genetic locus: SLC25A20 (human) mapping to 3p21.31.

PRODUCT

SLC25A20 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 SLC25A20 shRNA Plasmid (h): sc-78217-SH and SLC25A20 shRNA (h) Lentiviral Particles: sc-78217-V as alternate gene silencing products.

For independent verification of SLC25A20 (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-78217A, sc-78217B and sc-78217C.

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

SLC25A20 siRNA (h) is recommended for the inhibition of SLC25A20 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 SLC25A20 gene expression knockdown using RT-PCR Primer: SLC25A20 (h)-PR: sc-78217-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.