SANTA CRUZ BIOTECHNOLOGY, INC.

CTP siRNA (h): sc-77046

BACKGROUND

CTP (citrate transport protein), also known as Tricarboxylate transport protein, SLC25A1 or SLC20A3, is a 311 amino acid mitochondrial multi-pass membrane protein that primarily functions to transport citrate across the mitochondrial inner membrane. Since it provides a carbon source for sterol and fatty acid biosynthesis, CTP is important for the bioenergetics of hepatic cells. The gene encoding CTP resides within a chromosomal region that is frequently deleted in patients that suffer from DiGeorge syndrome, a disease characterized by susceptibility to infection due to a deficit of T cells, cardiac malformations and tetany or seizures. Playing a significant role in intermediate metabolism, it appears that CTP function may be altered in type I diabetes and some cancers. CTP is highly expressed in adult ovary, gut liver, and testis, as well as in fetal kidney, lung, brain and liver.

REFERENCES

1. Kaplan, R.S., et al. 1993. The mitochondrial tricarboxylate transport protein. cDNA cloning, primary structure, and comparison with other mitochondrial transport proteins. J. Biol. Chem. 268: 13682-13690.
2. Heisterkamp, N., et al. 1995. Localization of the human mitochondrial citrate transporter protein gene to chromosome 22Q11 in the DiGeorge syndrome critical region. Genomics 29: 451-456.
3. Goldmuntz, E., et al. 1996. Cloning, genomic organization, and chromosomal localization of human citrate transport protein to the DiGeorge/velocardiofacial syndrome minimal critical region. Genomics 33: 271-276.
4. Stoffel, M., et al. 1996. The human mitochondrial citrate transporter gene (SLC20A3) maps to chromosome band 22q11 within a region implicated in DiGeorge syndrome, velo-cardio-facial syndrome and schizophrenia. Hum. Genet. 98: 113-115.
5. Iacobazzi, V., et al. 1997. Organization and sequence of the human gene for the mitochondrial citrate transport protein. DNA Seq. 7: 127-139.

CHROMOSOMAL LOCATION

Genetic locus: SLC25A1 (human) mapping to 22q11.21.

PRODUCT

CTP 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 CTP shRNA Plasmid (h): sc-77046-SH and CTP shRNA (h) Lentiviral Particles: sc-77046-V as alternate gene silencing products.

For independent verification of CTP (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-77046A, sc-77046B and sc-77046C.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.

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

CTP siRNA (h) is recommended for the inhibition of CTP 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 CTP gene expression knockdown using RT-PCR Primer: CTP (h)-PR: sc-77046-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.