SANTA CRUZ BIOTECHNOLOGY, INC.

DIC siRNA (m): sc-143038

BACKGROUND

DIC (dicarboxylate ion carrier), also known as solute carrier family 25 member 10 (SLC25A10) or mitochondrial dicarboxylate carrier, is a 287 amino acid multi-pass membrane protein that localizes to mitochondrial inner membrane and belongs to the mitochondrial carrier family. DIC supplies substrates for gluconeogenesis, urea synthesis, sulfur metabolism and the Krebs cycle by catalyzing the transport of dicarboxylates across the mitochondrial membrane in exchange for sulfate, thiosulfate, sulfite or phosphate. DIC also supplies malate during citrate transport and is required for fatty acid synthesis. Inhibition of DIC causes down-regulation of the lipogenic pathway. Highly expressed in kidney and liver, DIC is also found at lower levels in brain, lung, pancreas, spleen and heart. DIC contains three Solcar repeats and is encoded by a gene that maps to human chromosome 17q25.3. As a result of alternative splicing events, two DIC isoforms exist.

REFERENCES

1. Pannone, E., et al. 1998. Assignment of the human dicarboxylate carrier gene (DIC) to chromosome 17 band 17q25.3. Cytogenet. Cell Genet. 83: 238-239.
2. Fiermonte, G., et al. 1999. Organization and sequence of the gene for the human mitochondrial dicarboxylate carrier: evolution of the carrier family. Biochem. J. 344: 953-960.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 606794. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Mizuarai, S., et al. 2005. Identification of dicarboxylate carrier Slc25a10 as malate transporter in *de novo* fatty acid synthesis. J. Biol. Chem. 280: 32434-32441.
5. Lash, L.H. 2006. Mitochondrial glutathione transport: physiological, pathological and toxicological implications. Chem. Biol. Interact. 163: 54-67.

CHROMOSOMAL LOCATION

Genetic locus: Slc25a10 (mouse) mapping to 11 E2.

PRODUCT

DIC siRNA (m) 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 DIC shRNA Plasmid (m): sc-143038-SH and DIC shRNA (m) Lentiviral Particles: sc-143038-V as alternate gene silencing products.

For independent verification of DIC (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-143038A, sc-143038B and sc-143038C.

PROTOCOLS

See our web site at www.scbt.com 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

DIC siRNA (m) is recommended for the inhibition of DIC expression in mouse 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 DIC gene expression knockdown using RT-PCR Primer: DIC (m)-PR: sc-143038-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.