SANTA CRUZ BIOTECHNOLOGY, INC.

MCART1 siRNA (h): sc-106209

BACKGROUND

Mitochondria are the primary generators of ATP, which is the cellular chemical source of energy. Defects in the mitochondria mainly manifest as neurological disorders, such as Leber's hereditary optic neuropathy, Kearns-Sayre syndrome and mitochondrial encephalopathy lactic acidosis (MELA). The mitochondria is composed of regions that carry out specialized functions: outer membrane, inermembrane space, inner membrane, cristae and matrix. Inner membrane mitochondrial proteins are responsible for the transport of metabolites across the mitochondrial membrane and therefore maintain optimal concentrations of solutes within the organelle. MCARTs (mitochondrial carrier triple repeat protein) are mitochondrial multipass inner membrane proteins that contain three solcar repeats, which are typical of substrate carrier proteins involved in energy transfer.

REFERENCES

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CHROMOSOMAL LOCATION

Genetic locus: SLC25A51 (human) mapping to 9p13.2.

PRODUCT

MCART1 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 MCART1 shRNA Plasmid (h): sc-106209-SH and MCART1 shRNA (h) Lentiviral Particles: sc-106209-V as alternate gene silencing products.

For independent verification of MCART1 (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-106209A, sc-106209B and sc-106209C.

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

MCART1 siRNA (h) is recommended for the inhibition of MCART1 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 MCART1 gene expression knockdown using RT-PCR Primer: MCART1 (h)-PR: sc-106209-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.