

SLC25A11 siRNA (m): sc-153500

BACKGROUND

Inner membrane mitochondrial proteins are responsible for the transport of metabolites across the mitochondrial membrane. SLC25A11 (solute carrier family 25 member 11), also known as mitochondrial 2-oxoglutarate/malate carrier protein, is a 314 amino acid multi-pass transmembrane protein belonging to the mitochondrial carrier protein family. As an oxoglutarate/malate carrier, SLC25A11 transports 2-oxoglutarate across the inner mitochondrial membrane in an electroneutral exchange for dicarboxylic acids and malate. SLC25A11 also participates in other important metabolic processes, such as the oxoglutarate/isocitrate shuttle and the malate-aspartate shuttle, as well as in nitrogen metabolism and in gluconeogenesis from lactate. SLC25A11 contains three solcar repeats, which is typical of substrate carrier proteins involved in energy transfer.

REFERENCES

1. Aquila, H., et al. 1987. Solute carriers involved in energy transfer of mitochondria form a homologous protein family. *FEBS Lett.* 212: 1-9.
2. Iacobazzi, V., et al. 1992. Sequences of the human and bovine genes for the mitochondrial 2-oxoglutarate carrier. *DNA Seq.* 3: 79-88.
3. Kuan, J. and Saier, M.H. 1993. The mitochondrial carrier family of transport proteins: structural, functional, and evolutionary relationships. *Crit. Rev. Biochem. Mol. Biol.* 28: 209-233.
4. Piccininni, S., et al. 1998. Assignment of the oxoglutarate carrier gene (SLC20A4) to human chromosome 17p13.3. *Cytogenet. Cell Genet.* 83: 256-257.

CHROMOSOMAL LOCATION

Genetic locus: SLC25a11 (mouse) mapping to 11 B3.

PRODUCT

SLC25A11 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see SLC25A11 shRNA Plasmid (m): sc-153500-SH and SLC25A11 shRNA (m) Lentiviral Particles: sc-153500-V as alternate gene silencing products.

For independent verification of SLC25A11 (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-153500A, sc-153500B and sc-153500C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

SLC25A11 siRNA (m) is recommended for the inhibition of SLC25A11 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 μ M in 66 μ l. 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.

GENE EXPRESSION MONITORING

SLC25A11 (E-2): sc-515593 is recommended as a control antibody for monitoring of SLC25A11 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor SLC25A11 gene expression knockdown using RT-PCR Primer: SLC25A11 (m)-PR: sc-153500-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Sakai, T., et al. 2021. Effects of the cytoplasm and mitochondrial specific hydroxyl radical scavengers TA293 and mitoTA293 in bleomycin-induced pulmonary fibrosis model mice. *Antioxidants* 10: 1398.

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.