

SLC25A25 siRNA (m): sc-153508

BACKGROUND

SLC25A25 (solute carrier family 25 member 25), also known as MCSC (mitochondrial calcium-dependent solute carrier protein), PCSCL or SCaMC-2 (small calcium-binding mitochondrial carrier protein 2), is a 469 amino acid multi-pass membrane protein that belongs to the SLC25 family of mitochondrial carriers that are responsible for transporting metabolites across the inner mitochondrial membrane. Expressed in a wide variety of tissues and localized to the mitochondrion inner membrane, SLC25A25 contains three Solcar repeats and three EF-hand domains and functions as a calcium-dependent mitochondrial solute carrier. More specifically, SLC25A25 acts as an ATP-Mg/Pi co-transporter, facilitating the transport of Mg-ATP in exchange for phosphate. Due to alternative splicing events, six isoforms exist for SLC25A25, namely SCaMC-2a, SCaMC-2b, isoform 3, SCaMC-2c, isoform 5 and SCaMC-2d. SCaMC-2a is ubiquitously expressed while SCaMC-2b expression is limited to lung and kidney.

REFERENCES

1. Nagase, T., et al. 2001. Prediction of the coding sequences of unidentified human genes. XXI. The complete sequences of 60 new cDNA clones from brain which code for large proteins. *DNA Res.* 8: 179-187.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 608745. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
3. Mashima, H., et al. 2003. A novel mitochondrial Ca²⁺-dependent solute carrier in the liver identified by mRNA differential display. *J. Biol. Chem.* 278: 9520-9527.
4. del Arco, A. and Satrustegui, J. 2004. Identification of a novel human subfamily of mitochondrial carriers with calcium-binding domains. *J. Biol. Chem.* 279: 24701-24713.
5. Fiermonte, G., et al. 2004. Identification of the mitochondrial ATP-Mg/Pi transporter. Bacterial expression, reconstitution, functional characterization, and tissue distribution. *J. Biol. Chem.* 279: 30722-30730.

CHROMOSOMAL LOCATION

Genetic locus: Slc25a25 (mouse) mapping to 2 B.

PRODUCT

SLC25A25 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 SLC25A25 shRNA Plasmid (m): sc-153508-SH and SLC25A25 shRNA (m) Lentiviral Particles: sc-153508-V as alternate gene silencing products.

For independent verification of SLC25A25 (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-153508A, sc-153508B and sc-153508C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

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

SLC25A25 siRNA (m) is recommended for the inhibition of SLC25A25 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

SLC25A25 (4D8): sc-517143 is recommended as a control antibody for monitoring of SLC25A25 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 SLC25A25 gene expression knockdown using RT-PCR Primer: SLC25A25 (m)-PR: sc-153508-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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