SANTA CRUZ BIOTECHNOLOGY, INC.

SLC25A23 siRNA (h): sc-97088

BACKGROUND

SLC25A23 (solute carrier family 25 (mitochondrial carrier; phosphate carrier), member 23), also known as APC2, MCSC2, MGC2615 or SCaMC-3, is a 467 amino acid mitochondrial inner membrane protein expressed at highest levels in brain, skeletal muscle and pancreas with low expression in other tissues. Existing as four alternatively spliced isoforms, SLC25A23 contains three EF-hand domains and three Solcar repeats. Belonging to the mitochondrial carrier superfamily of proteins, SLC25A23 is calcium-dependent mitochondrial solute carrier that shuttles metabolites, nucleotides and cofactors through the mitochondrial inner membrane. SLC25A23 is thought to act as an ATP-Mg/P_i exchanger that regulates the transport of Mg-ATP in exchange for phosphate, catalyzing the net uptake or efflux of adenine nucleotides into or from the mitochondria. SLC25A23 is encoded by a gene located on human chromosome 19p13.3.

REFERENCES

1. del Arco, A. and Satrústegui, J. 2004. Identification of a novel human subfamily of mitochondrial carriers with calcium-binding domains. J. Biol. Chem. 279: 24701-24713.
2. Online Mendelian Inheritance in Man, OMIM™. 2004. Johns Hopkins University, Baltimore, MD. MIM Number: 608746. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Del Arco, A. 2005. Novel variants of human SCaMC-3, an isoform of the ATP-Mg/P_i mitochondrial carrier, generated by alternative splicing from 3'-flanking transposable elements. Biochem. J. 389: 647-655.
4. Arco, A.D. and Satrústegui, J. 2005. New mitochondrial carriers: an overview. Cell. Mol. Life Sci. 62: 2204-2227.
5. Bassi, M.T., Manzoni, M., Bresciani, R., Pizzo, M.T., Della Monica, A., Barlati, S., Monti, E. and Borsani, G. 2005. Cellular expression and alternative splicing of SLC25A23, a member of the mitochondrial Ca^{2+}-dependent solute carrier gene family. Gene 345: 173-182.
6. Satrústegui, J., Pardo, B. and Del Arco, A. 2007. Mitochondrial transporters as novel targets for intracellular calcium signaling. Physiol. Rev. 87: 29-67.

CHROMOSOMAL LOCATION

Genetic locus: SLC25A23 (human) mapping to 19p13.3.

PRODUCT

SLC25A23 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 SLC25A23 shRNA Plasmid (h): sc-97088-SH and SLC25A23 shRNA (h) Lentiviral Particles: sc-97088-V as alternate gene silencing products.

For independent verification of SLC25A23 (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-97088A, sc-97088B and sc-97088C.

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

SLC25A23 siRNA (h) is recommended for the inhibition of SLC25A23 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.

GENE EXPRESSION MONITORING

SLC25A23 (D-9): sc-377109 is recommended as a control antibody for monitoring of SLC25A23 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 SLC25A23 gene expression knockdown using RT-PCR Primer: SLC25A23 (h)-PR: sc-97088-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.