

SLC25A18 siRNA (m): sc-153502

BACKGROUND

SLC25A18 (solute carrier family 25 (mitochondrial carrier), member 18), also known as GC2, is a 315 amino acid multi-pass membrane protein that belongs to the mitochondrial carrier family. Human SLC25A18 is 87% identical to its mouse homolog and 63% identical to the protein sequence of SLC25A22. SLC25A18 is one of two mitochondrial glutamate/H⁺ symporters, the other being SLC25A22. SLC25A18 is also involved in the transport of glutamate across the inner mitochondrial membrane as glutamate is cotransported with H⁺. Containing three Solcar repeats, SLC25A18 is found to have strongest expression in adult human brain, with less expression in testis and weak expression in other tissues. The SLC25A18 gene comprises 11 exons, is conserved in chimpanzee, canine, mouse, rat and zebrafish, and maps to human chromosome 22q11.21, which is within the distal half of the cat eye syndrome critical region.

REFERENCES

1. Palmieri, L., Pardo, B., Lasorsa, F.M., del Arco, A., Kobayashi, K., Iijima, M., Runswick, M.J., Walker, J.E., Saheki, T., Satrustegui, J. and Palmieri, F. 2001. Citrin and aralar1 are Ca²⁺-stimulated aspartate/glutamate transporters in mitochondria. *EMBO J.* 20: 5060-5069.
2. Footz, T.K., Brinkman-Mills, P., Banting, G.S., Maier, S.A., Riaz, M.A., Bridgland, L., Hu, S., Birren, B., Minoshima, S., Shimizu, N., Pan, H., Nguyen, T., Fang, F., Fu, Y., Ray, L., Wu, H., Shaull, S., Phan, S., et al. 2001. Analysis of the cat eye syndrome critical region in humans and the region of conserved synteny in mice: a search for candidate genes at or near the human chromosome 22 pericentromere. *Genome Res.* 11: 1053-1070.
3. Fiermonte, G., Palmieri, L., Todisco, S., Agrimi, G., Palmieri, F. and Walker, J.E. 2002. Identification of the mitochondrial glutamate transporter. Bacterial expression, reconstitution, functional characterization, and tissue distribution of two human isoforms. *J. Biol. Chem.* 277: 19289-19294.
4. Palmieri, F. 2004. The mitochondrial transporter family (SLC25): physiological and pathological implications. *Pflugers Arch.* 447: 689-709.
5. Online Mendelian Inheritance in Man, OMIM[™]. 2005. Johns Hopkins University, Baltimore, MD. MIM Number: 609303. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
6. Hendrickson, S.L., Lautenberger, J.A., Chinn, L.W., Malasky, M., Sezgin, E., Kingsley, L.A., Goedert, J.J., Kirk, G.D., Gomperts, E.D., Buchbinder, S.P., Troyer, J.L. and O'Brien, S.J. 2010. Genetic variants in nuclear-encoded mitochondrial genes influence AIDS progression. *PLoS ONE* 5: e12862.

CHROMOSOMAL LOCATION

Genetic locus: Slc25a18 (mouse) mapping to 6 F1.

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.

PRODUCT

SLC25A18 siRNA (m) is a pool of 2 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 SLC25A18 shRNA Plasmid (m): sc-153502-SH and SLC25A18 shRNA (m) Lentiviral Particles: sc-153502-V as alternate gene silencing products.

For independent verification of SLC25A18 (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-153502A and sc-153502B.

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

SLC25A18 siRNA (m) is recommended for the inhibition of SLC25A18 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor SLC25A18 gene expression knockdown using RT-PCR Primer: SLC25A18 (m)-PR: sc-153502-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.