SANTA CRUZ BIOTECHNOLOGY, INC.

Mitoferrin 2 siRNA (h): sc-90800

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The Power to Question

BACKGROUND

Mitoferrin 2, also known as MRS3/4 (mitochondrial RNA-splicing protein 3/4 homolog), mitochondrial iron transporter 2, NPD016, MRS4L or SLC25A28 (solute carrier family 25 member 28), is a 364 amino acid multi-pass membrane protein of the mitochondrial inner membrane that mediates iron uptake. Mitoferrin 2 is thought to play a role in heme synthesis of hemoproteins and iron-sulfur cluster assembly. Ubiquitously expressed, Mitoferrin 2 is found at high levels in skeletal muscle, heart, placenta, kidney, lung, liver, brain and pancreas. Mitoferrin 2 is a member of the mitochondrial carrier family and undergoes alternative splicing events to produce four isoforms. Mitoferrin 2 contains three solcar repeats and is encoded by a gene that maps to human chromosome 10q24.2.

REFERENCES

1. Li, F.Y., et al. 2001. Characterization of a novel human putative mitochondrial transporter homologous to the yeast mitochondrial RNA splicing proteins 3 and 4. FEBS Lett. 494: 79-84.
2. Wistow, G., et al. 2002. Expressed sequence tag analysis of adult human iris for the NEIBank Project: steroid-response factors and similarities with retinal pigment epithelium. Mol. Vis. 8: 185-195.
3. Deloukas, P., et al. 2004. The DNA sequence and comparative analysis of human chromosome 10. Nature 429: 375-381.
4. Grupe, A., et al. 2006. A scan of chromosome 10 identifies a novel locus showing strong association with late-onset Alzheimer disease. Am. J. Hum. Genet. 78: 78-88.
5. Girard, A., et al. 2006. A germline-specific class of small RNAs binds mammalian Piwi proteins. Nature 442: 199-202.
6. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 605796. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: SLC25A28 (human) mapping to 10q24.2.

PRODUCT

Mitoferrin 2 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 Mitoferrin 2 shRNA Plasmid (h): sc-90800-SH and Mitoferrin 2 shRNA (h) Lentiviral Particles: sc-90800-V as alternate gene silencing products.

For independent verification of Mitoferrin 2 (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-90800A, sc-90800B and sc-90800C.

PROTOCOLS

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

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

Mitoferrin 2 siRNA (h) is recommended for the inhibition of Mitoferrin 2 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 Mitoferrin 2 gene expression knockdown using RT-PCR Primer: Mitoferrin 2 (h)-PR: sc-90800-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Ohgari, Y., et al. 2011. Roles of porphyrin and iron metabolisms in the δ-aminolevulinic acid (ALA)-induced accumulation of protoporphyrin and photodamage of tumor cells. Photochem. Photobiol. 87: 1138-1145.
2. Zhang, Z., et al. 2020. The BRD7-P53-SLC25A28 axis regulates ferroptosis in hepatic stellate cells. Redox Biol. 36: 101619.

RESEARCH USE

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