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SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

mail@szabo-scandic.com

www.szabo-scandic.com

linkedin.com/company/szaboscandic

SANTA CRUZ BIOTECHNOLOGY, INC.

Mitoferrin siRNA (m): sc-149449

BACKGROUND

Mitoferrin, also known as Mitochondrial iron transporter 1 or Solute carrier family 25 member 37, is a 338 amino acid multi-pass mitochondrial inner membrane protein that regulates iron influx within developing erythrocytes. Mitoferrin is highly expressed in hematopoietic tissues such as fetal liver, bone marrow and spleen. Knockdown of mitoferrin mRNA leads to decreased mitochondrial iron accumulation, heme synthesis and iron-sulfur cluster synthesis. Significantly, during episodes of hypoxia, HIF (Hypoxia inducible factor 1) may upregulate the gene encoding mitoferrin, leading to the enhancement of hemoglobin production within red blood cells. There are three isoforms of mitoferrin that are produced as a result of alternative splicing events.

REFERENCES

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4. Shaw, G.C., et al. 2006. Mitoferrin is essential for erythroid iron assimilation. Nature 440: 96-100.
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CHROMOSOMAL LOCATION

Genetic locus: Slc25a37 (mouse) mapping to 14 D2.

PRODUCT

Mitoferrin 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Mitoferrin shRNA Plasmid (m): sc-149449-SH and Mitoferrin shRNA (m) Lentiviral Particles: sc-149449-V as alternate gene silencing products.

For independent verification of Mitoferrin (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-149449A, sc-149449B and sc-149449C.

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 siRNA (m) is recommended for the inhibition of Mitoferrin 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 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 gene expression knockdown using RT-PCR Primer: Mitoferrin (m)-PR: sc-149449-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.