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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.

LIAS siRNA (m): sc-146724

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Lipoic acid is a potent antioxidant and a coenzyme that is essential for the activity of many central metabolic enzymes, such as the pyruvate dehydrogenase (PDH) complex, 2-oxoglutarate dehydrogenase (OGDH) complex and branched chain oxoacid dehydrogenase (BCDH) complex. It contains two vicinal sulfur atoms at C6 and C8 that are attached via a disulfide bond, which lead to its oxidated state. LIAS (Lipoyl synthase), also known as Lipoic acid synthase, is a 372 amino acid protein that inserts sulfurs onto the precursor octanoate, thereby synthesizing lipoic acid. Localized to the mitochondria, LIAS is expressed in liver, heart and testis. In mice, LIAS-deficiency enhances atherosclerosis, which is partly due to reduced antioxidant capacity. This does not occur in female mice, suggesting that there is a gender-specific protection mechanism.

REFERENCES

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7. Yi, X., Kim, K., Yuan, W., Xu, L., Kim, H.S., Homeister, J.W., Key, N.S. and Maeda, N. 2009. Mice with heterozygous deficiency of lipoic acid synthase have an increased sensitivity to lipopolysaccharide-induced tissue injury. J. Leukoc. Biol. 85: 146-153.
8. Yi, X., Xu, L., Kim, K., Kim, H.S. and Maeda, N. 2010. Genetic reduction of lipoic acid synthase expression modestly increases atherosclerosis in male, but not in female, apolipoprotein E-deficient mice. Atherosclerosis 211: 424-430.

CHROMOSOMAL LOCATION

Genetic locus: Lias (mouse) mapping to 5 C3.1.

PROTOCOLS

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

PRODUCT

LIAS siRNA (m) is a target-specific 19-25 nt siRNA 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 LIAS shRNA Plasmid (m): sc-146724-SH and LIAS shRNA (m) Lentiviral Particles: sc-146724-V as alternate gene silencing 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

LIAS siRNA (m) is recommended for the inhibition of LIAS 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 LIAS gene expression knockdown using RT-PCR Primer: LIAS (m)-PR: sc-146724-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.