SANTA CRUZ BIOTECHNOLOGY, INC.

NDUFA9 siRNA (m): sc-72130

BACKGROUND

NDUFA9 (NADH-ubiquinone oxidoreductase a subunit 9) is one of about 45 subunits comprising complex I of the oxidative phosphorylation electron transport chain. The multisubunit NADH:ubiquinone oxidoreductase (complex I) is the first enzyme complex in the electron transport chain of the mitochondria. NDUFA9 is a subunit of the inner membrane of complex I. Through use of chaotropic agents, complex I can be separated into three different fractions: a flavoprotein fraction, a hydrophobic protein (HP) fraction and an iron-sulfur protein (IP) fraction, which includes NDUFS1-7 and NDUFA5. NDUFA9 is part of the hydrophobic protein fraction, although it is mostly hydrophilic. NDUFA9 is often used as a mitochondrial marker.

REFERENCES

1. Chow, W., et al. 1991. Determination of the cDNA sequence for the human mitochondrial 75-kDa Fe-S protein of NADH-coenzyme Q reductase. Eur. J. Biochem. 201: 547-550.
2. Duncan, A.M., et al. 1992. Localization of the human 75-kDal Fe-S protein of NADH-coenzyme Q reductase gene (NDUFS1) to 2q33—q34. Cytogenet. Cell Genet. 60: 212-213.
3. Stojanovski, D., et al. 2004. Levels of human Fis1 at the mitochondrial outer membrane regulate mitochondrial morphology. J. Cell Sci. 117: 1201-1210.
4. Karahan, O.I., et al. 2005. Ultrasound evaluation of peritoneal catheter tunnel in catheter related infections in CAPD. Int. Urol. Nephrol. 37: 363-366.
5. Martin, M.A., et al. 2005. Leigh syndrome associated with mitochondrial complex I deficiency due to a novel mutation in the NDUFS1 gene. Arch. Neurol. 62: 659-661.
6. Smeitink, J.A., et al. 2005. Cell biological consequences of mitochondrial NADH: ubiquinone oxidoreductase deficiency. Curr. Neurovasc. Res. 1: 29-40.
7. Sparks, L.M., et al. 2005. A high-fat diet coordinately downregulates genes required for mitochondrial oxidative phosphorylation in skeletal muscle. Diabetes 54: 1926-1933.

CHROMOSOMAL LOCATION

Genetic locus: Ndufa9 (mouse) mapping to 6 F3.

PRODUCT

NDUFA9 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 NDUFA9 shRNA Plasmid (m): sc-72130-SH and NDUFA9 shRNA (m) Lentiviral Particles: sc-72130-V as alternate gene silencing products.

For independent verification of NDUFA9 (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-72130A, sc-72130B and sc-72130C.

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

NDUFA9 siRNA (m) is recommended for the inhibition of NDUFA9 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 NDUFA9 gene expression knockdown using RT-PCR Primer: NDUFA9 (m)-PR: sc-72130-PR (20 µl, 447 bp). 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.