SANTA CRUZ BIOTECHNOLOGY, INC.

NDUFA2 siRNA (h): sc-92061

BACKGROUND

NDUFA2 (NADH dehydrogenase (ubiquinone) 1 α subcomplex, 2, 8 kDa), also known as CD14 or B8, is a 99 amino acid protein that localizes to the inner mitochondrial membrane. NDUFA2 functions as an accessory subunit of the mitochondrial membrane respiratory chain NADH dehydrogenase complex I. Complex I plays an important role in the transfer of electrons from NADH to the respiratory chain, a process that is essential for cellular respiration. Mutations in the gene encoding NDUFA2 may disrupt the function of complex I and could be involved in the pathogenesis of Leigh syndrome, a rare neurometabolic disorder that is characterized by a loss of motor skills and, ultimately, death.

REFERENCES

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2. Ton, C., et al. 1997. Identification and primary structure of five human NADH-ubiquinone oxidoreductase subunits. Biochem. Biophys. Res. Commun. 241: 589-594.
3. Dunbar, D.R., et al. 1997. *In situ* hybridisation mapping of genomic clones for five human respiratory chain complex I genes. Cytogenet. Cell Genet. 78: 21-24.
4. Loeffen, J.L., et al. 1998. cDNA of eight nuclear encoded subunits of NADH: ubiquinone oxidoreductase: human complex I cDNA characterization completed. Biochem. Biophys. Res. Commun. 253: 415-422.
5. Emahazion, T. and Brookes, A.J. 1998. Mapping of the NDUFA2, NDUFA6, NDUFA7, NDUFB8, and NDUFS8 electron transport chain genes by intron based radiation hybrid mapping. Cytogenet. Cell Genet. 82: 114.
6. Brockmann, C., et al. 2004. The oxidized subunit B8 from human complex I adopts a thioredoxin fold. Structure 12: 1645-1654.
7. Vogel, R.O., et al. 2007. Identification of mitochondrial complex I assembly intermediates by tracing tagged NDUFS3 demonstrates the entry point of mitochondrial subunits. J. Biol. Chem. 282: 7582-7590.

CHROMOSOMAL LOCATION

Genetic locus: NDUFA2 (human) mapping to 5q31.3.

PRODUCT

NDUFA2 siRNA (h) 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see NDUFA2 shRNA Plasmid (h): sc-92061-SH and NDUFA2 shRNA (h) Lentiviral Particles: sc-92061-V as alternate gene silencing products.

For independent verification of NDUFA2 (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-92061A and sc-92061B.

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

NDUFA2 siRNA (h) is recommended for the inhibition of NDUFA2 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 NDUFA2 gene expression knockdown using RT-PCR Primer: NDUFA2 (h)-PR: sc-92061-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.