SANTA CRUZ BIOTECHNOLOGY, INC.

NDUFA4 siRNA (m): sc-106286

BACKGROUND

NDUFA4 (NADH dehydrogenase (ubiquinone) 1 α subcomplex, 4), also known as MLRQ, is an 81 amino acid protein that localizes to the matrix side of the inner mitochondrial membrane and belongs to the complex I NDUFA4 subunit family. Existing as a subunit of the multi-protein membrane respiratory chain NADH dehydrogenase complex (Complex I), NDUFA4 functions as an accessory protein that facilitates the transfer of electrons from NADH to the respiratory chain. The gene encoding NDUFA7 maps to human chromosome 7, which houses over 1,000 genes and comprises nearly 5% of the human genome. Defects in some of the genes localized to chromosome 7 have been linked to osteogenesis imperfecta, Williams-Beuren syndrome, Pendred syndrome, lissencephaly, citrullinemia and Shwachman-Diamond syndrome.

REFERENCES

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2. Loeffen, J.L., Triepels, R.H., van den Heuvel, L.P., Schuelke, M., Buskens, C.A., Smeets, R.J., Trijbels, J.M. and Smeitink, J.A. 1998. cDNA of eight nuclear encoded subunits of NADH:ubiquinone oxidoreductase: human complex I cDNA characterization completed. Biochem. Biophys. Res. Commun. 253: 415-422.
3. Online Mendelian Inheritance in Man, OMIM™. 1999. Johns Hopkins University, Baltimore, MD. MIM Number: 603833. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Lamhonwah, A.M. and Tein, I. 2006. Novel localization of OCTN1, an organic cation/carnitine transporter, to mammalian mitochondria. Biochem. Biophys. Res. Commun. 345: 1315-1325.
5. Mishmar, D., Ruiz-Pesini, E., Mondragon-Palomino, M., Procaccio, V., Gaut, B. and Wallace, D.C. 2006. Adaptive selection of mitochondrial complex I subunits during primate radiation. Gene 378: 11-18.

CHROMOSOMAL LOCATION

Genetic locus: Ndufa4 (mouse) mapping to 6 A1.

PRODUCT

NDUFA4 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 NDUFA4 shRNA Plasmid (m): sc-106286-SH and NDUFA4 shRNA (m) Lentiviral Particles: sc-106286-V as alternate gene silencing products.

For independent verification of NDUFA4 (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-106286A, sc-106286B and sc-106286C.

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

NDUFA4 siRNA (m) is recommended for the inhibition of NDUFA4 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.

RESEARCH USE

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