SANTA CRUZ BIOTECHNOLOGY, INC.

NDUFAF3 siRNA (h): sc-77956

BACKGROUND

NDUFAF3 (NADH dehydrogenase [ubiquinone] 1 α subcomplex assembly factor 3), also known as 2P1 or E3-3, is a 184 amino acid protein that localizes to the nucleus and mitochondrial inner membrane. Existing as two alternatively spliced isoforms, NDUFAF3 is important in the assembly of the mitochondrial NADH:ubiquinone oxidoreductase complex (complex I). The gene encoding NDUFAF3 maps to human chromosome 3p21.31. Defects in the gene are the cause of mitochondrial complex I deficiency (MT-C1D), a mitochondrial respiratory chain disorder that can be lethal in neonates and may lead to neurodegenerative disorders in adults. Chromosome 3 houses over 1,100 genes, including a chemokine receptor (CKR) gene cluster and a variety of human cancer-related gene loci.

REFERENCES

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2. Maho, A., et al. 1999. Mapping of the CCXCR1, CX3CR1, CCBP2 and CCR9 genes to the CCR cluster within the 3p21.3 region of the human genome. Cytogenet. Cell Genet. 87: 265-268.
3. Coenen, M.J., et al. 2001. Mitochondrial oxidative phosphorylation system assembly in man: recent achievements. Curr. Opin. Neurol. 14: 777-781.
4. Hammami-Hamza, S., et al. 2003. 2P1, a novel male mouse cDNA specifically expressed during meiosis. Int. J. Dev. Biol. 47: 71-76.
5. Braga, E.A., et al. 2003. New tumor suppressor genes in hot spots of human chromosome 3: new methods of identification]. Mol. Biol. 37: 194-211.
6. Saada, A., et al. 2009. Mutations in NDUFAF3 (C3ORF60), encoding an NDUFAF4 (C6ORF66)-interacting complex I assembly protein, cause fatal neonatal mitochondrial disease. Am. J. Hum. Genet. 84: 718-727.
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CHROMOSOMAL LOCATION

Genetic locus: NDUFAF3 (human) mapping to 3p21.31.

PRODUCT

NDUFAF3 siRNA (h) 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 NDUFAF3 shRNA Plasmid (h): sc-77956-SH and NDUFAF3 shRNA (h) Lentiviral Particles: sc-77956-V as alternate gene silencing products.

For independent verification of NDUFAF3 (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-77956A, sc-77956B and sc-77956C.

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

NDUFAF3 siRNA (h) is recommended for the inhibition of NDUFAF3 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 NDUFAF3 gene expression knockdown using RT-PCR Primer: NDUFAF3 (h)-PR: sc-77956-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.