MT-ND6 siRNA – NADH Dehydrogenase Subunit 6 (Mitochondrion) (Human)

PRODUCT OVERVIEW

Product Name	MT-ND6, siRNA
Full Product Name	MT-ND6 siRNA (Human)
Product Gene Name	MT-ND6 sirna
Product Synonym Names	MTND6; NADH6; ND6; NADH-ubiquinone oxidoreductase chain 6; NADH dehydrogenase subunit 6
Host	Synthetic
Species Reactivity	Human
Form/Format	Lyophilized powder
Purity/Purification	> 97%
Specificity	MT-ND6 siRNA (Human) is a target-specific 19-23 nt siRNA oligo duplexes designed to knock down gene expression.
Preparation and Storage	Shipped at 4 degree C. Store at -20 degree C for one year.
Molecular Weight	18,622 Da
OMIM	252010
3D Structure	ModBase 3D Structure for P03923
Negative Control	siRNA Negative Control (Catalog# MBS8241404) is a non-targeting 21 nt siRNA recommended as a negative control for experiments using targeted siRNA transfection.
Quality Control	Oligonucleotide synthesis is monitored base by base through trityl analysis to ensure appropriate coupling efficiency. The oligo is subsequently purified by affinity-solid phase extraction. The annealed RNA duplex is further analyzed by mass spectrometry to verify the exact composition of the duplex. Each lot is compared to the previous lot by mass spectrometry to ensure maximum lot-to-lot consistency.
Directions for Use	We recommends transfection with 100 nM siRNA 48 to 72 hours prior to cell lysis. Before resuspending, briefly centrifuge the tube to ensure the lyophilized siRNA is at the bottom of the tube. Resuspend the siRNA oligos to an appropriate concentration with DEPC water. For each vial, suitable for 250 transfections in 24 well plate (20 pmol for each well).
Components	We offer pre-designed sets of 3 different target-specific siRNA oligo duplexes of human MT-ND6 gene. Each vial contains 5 nmol of lyophilized siRNA. The duplexes can be transfected individually or pooled together to achieve knockdown of the target gene, which is most commonly assessed by qPCR or western blot. Our siRNA oligos are also chemically modified (2'-OMe) at no extra charge for increased stability and enhanced knockdown in vitro and in vivo.
Applications Tested/Suitable for MT-ND6 sirna	RNA Interference (RNAi)
Related Product Information for MT-ND6 sirna	MBS8232884 is an siRNA targeting MT-ND6. Also known as MT-ND6 siRNA (Human). Reactive in Human. Host: Synthetic. siRNA to inhibit MT-ND6 expression using RNA interference
Other Notes	Small volumes of MT-ND6 sirna vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for MT-ND6. It may not necessarily be applicable to this product.

NCBI GI #	251831118
NCBI GeneID	4541
NCBI Accession #	YP_003024037.1
UniProt Primary Accession #	P03923
UniProt Secondary Accession #	Q34774; Q8HG30
GenBank Nucleotide #	NC_012920.1
NCBI Official Full Name	NADH dehydrogenase subunit 6 (mitochondrion)
NCBI Official Synonym Full Names	mitochondrially encoded NADH dehydrogenase 6
NCBI Official Symbol	MT-ND6
NCBI Official Synonym Symbols	MTND6; ND6
UniProt Protein Name	NADH-ubiquinone oxidoreductase chain 6
UniProt Synonym Protein Names	NADH dehydrogenase subunit 6
Protein Family	NADH-ubiquinone oxidoreductase
UniProt Gene Name	MT-ND6
UniProt Synonym Gene Names	MTND6; NADH6; ND6
UniProt Entry Name	NU6M_HUMAN
NCBI Protein Information	NADH dehydrogenase, subunit 6 (complex I)
UniProt Comments for MT-ND6	MT-ND6: Core subunit of the mitochondrial membrane respiratory chain NADH dehydrogenase (Complex I) that is believed to belong to the minimal assembly required for catalysis. Complex I functions in the transfer of electrons from NADH to the respiratory chain. The immediate electron acceptor for the enzyme is believed to be ubiquinone. Defects in MT-ND6 are a cause of Leber hereditary optic neuropathy (LHON). LHON is a maternally inherited disease resulting in acute or subacute loss of central vision, due to optic nerve dysfunction. Cardiac conduction defects and neurological defects have also been described in some patients. LHON results from primary mitochondrial DNA mutations affecting the respiratory chain complexes. Defects in MT-ND6 are a cause of Leber hereditary optic neuropathy with dystonia (LDYT); also called familial dystonia with visual failure and striatal lucencies. LDYT is part of a spectrum of Leber hereditary optic neuropathy. It is characterized by the association of optic atrophy and central vision loss with dystonia. Defects in MT-ND6 are a cause of mitochondrial encephalomyopathy with lactic acidosis and stroke-like episodes syndrome (MELAS). MELAS is a genetically heterogenious disorder, characterized by episodic vomiting, seizures, and recurrent cerebral insults resembling strokes and causing hemiparesis, hemianopsia, or cortical blindness. Defects in MT-ND6 are a cause of mitochondrial complex I deficiency (MT-C1D). A disorder of the mitochondrial respiratory chain that causes a wide range of clinical manifestations from lethal neonatal disease to adult-onset neurodegenerative disorders. Phenotypes include macrocephaly with progressive leukodystrophy, non-specific encephalopathy, cardiomyopathy, myopathy, liver disease, Leigh syndrome, Leber hereditary optic neuropathy, and some forms of Parkinson disease. Belongs to the complex I subunit 6 family. Protein type: Energy Metabolism - oxidative phosphorylation; Membrane protein, integral; Membrane protein, multi-pass; EC 1.6.5.3; Oxidoreductase Chromosomal Location of Human Ortholog: - Disease: Mitochondrial Myopathy, Encephalopathy, Lactic Acidosis, And Stroke-like Episodes; Leber Optic Atrophy
Research Articles on MT-ND6	**1.** Protein modeling revealed loss of function mutations of ND6 and COX-II proteins in malignant vs benign tumors
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