TOP1MT siRNA – DNA Topoisomerase I, Mitochondrial Isoform 2 (Human)

PRODUCT OVERVIEW

Product Name	TOP1MT, siRNA
Full Product Name	TOP1MT siRNA (Human)
Product Gene Name	TOP1MT sirna
Product Synonym Names	DNA topoisomerase I mitochondrial; TOP1mt
Host	Synthetic
Species Reactivity	Human
Form/Format	Lyophilized powder
Purity/Purification	> 97%
Specificity	TOP1MT 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	58,645 Da
OMIM	606387
3D Structure	ModBase 3D Structure for Q969P6
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 TOP1MT 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 TOP1MT sirna	RNA Interference (RNAi)
Related Product Information for TOP1MT sirna	MBS827758 is an siRNA targeting TOP1MT. Also known as TOP1MT siRNA (Human). Reactive in Human. Host: Synthetic. siRNA to inhibit TOP1MT expression using RNA interference
Other Notes	Small volumes of TOP1MT 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 TOP1MT. It may not necessarily be applicable to this product.

NCBI GI #	386642871
NCBI GeneID	116447
NCBI Accession #	NP_001245375.1
UniProt Primary Accession #	Q969P6
UniProt Secondary Accession #	Q86ST4; Q86V82; B7ZAR5; E7ES89
UniProt Related Accession #	Q969P6
GenBank Nucleotide #	NM_001258446.1
NCBI Official Full Name	DNA topoisomerase I, mitochondrial isoform 2
NCBI Official Synonym Full Names	topoisomerase (DNA) I, mitochondrial
NCBI Official Symbol	TOP1MT
UniProt Protein Name	DNA topoisomerase I, mitochondrial
Protein Family	DNA topoisomerase
UniProt Gene Name	TOP1MT
UniProt Synonym Gene Names	TOP1mt
UniProt Entry Name	TOP1M_HUMAN
NCBI Protein Information	DNA topoisomerase I, mitochondrial
NCBI Summary for TOP1MT	This gene encodes a mitochondrial DNA topoisomerase that plays a role in the modification of DNA topology. The encoded protein is a type IB topoisomerase and catalyzes the transient breaking and rejoining of DNA to relieve tension and DNA supercoiling generated in the mitochondrial genome during replication and transcription. Alternatively spliced transcript variants encoding multiple isoforms have been observed for this gene. [provided by RefSeq, May 2012]
UniProt Comments for TOP1MT	TOP1MT: Releases the supercoiling and torsional tension of DNA introduced during duplication of mitochondrial DNA by transiently cleaving and rejoining one strand of the DNA duplex. Introduces a single-strand break via transesterification at a target site in duplex DNA. The scissile phosphodiester is attacked by the catalytic tyrosine of the enzyme, resulting in the formation of a DNA-(3'-phosphotyrosyl)-enzyme intermediate and the expulsion of a 5'-OH DNA strand. The free DNA strand than undergoes passage around the unbroken strand thus removing DNA supercoils. Finally, in the religation step, the DNA 5'-OH attacks the covalent intermediate to expel the active-site tyrosine and restore the DNA phosphodiester backbone. Belongs to the type IB topoisomerase family. Protein type: Mitochondrial; Topoisomerase; EC 5.99.1.2 Chromosomal Location of Human Ortholog: 8q24.3 Cellular Component: mitochondrion; nucleolus; nucleus Molecular Function: DNA topoisomerase (ATP-hydrolyzing) activity; DNA binding; DNA topoisomerase type I activity Biological Process: chromatin remodeling; DNA topological change; DNA replication; chromosome segregation
Research Articles on TOP1MT	**1.** Data indicate that the different coordination geometry achieved by the two transition metal ions has an important role in modulating their efficiency as topoisomerase I inhibitors.
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