TPH1 siRNA – Tryptophan 5-Hydroxylase 1 Isoform 1 (Mouse)

PRODUCT OVERVIEW

Product Name	TPH1, siRNA
Full Product Name	TPH1 siRNA (Mouse)
Product Gene Name	TPH1 sirna
Product Synonym Names	TPH; Tryptophan 5-hydroxylase 1; Tryptophan 5-monooxygenase 1
Host	Synthetic
Species Reactivity	Mouse
Form/Format	Lyophilized powder
Purity/Purification	> 97%
Specificity	TPH1 siRNA (Mouse) 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	51,343 Da
3D Structure	ModBase 3D Structure for P17532
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 mouse TPH1 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 TPH1 sirna	RNA Interference (RNAi)
Related Product Information for TPH1 sirna	MBS8225729 is an siRNA targeting TPH1. Also known as TPH1 siRNA (Mouse). Reactive in Mouse. Host: Synthetic. siRNA to inhibit TPH1 expression using RNA interference
Other Notes	Small volumes of TPH1 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 TPH1. It may not necessarily be applicable to this product.

NCBI GI #	209862985

NCBI GeneID	21990
NCBI Accession #	NP_001129556.1
UniProt Primary Accession #	P17532
UniProt Related Accession #	P17532
GenBank Nucleotide #	NM_001136084.2
NCBI Official Full Name	tryptophan 5-hydroxylase 1 isoform 1
NCBI Official Synonym Full Names	tryptophan hydroxylase 1
NCBI Official Symbol	Tph1
NCBI Official Synonym Symbols	Tph
UniProt Protein Name	Tryptophan 5-hydroxylase 1
UniProt Synonym Protein Names	Tryptophan 5-monooxygenase 1
Protein Family	Tryptophan 5-hydroxylase
UniProt Gene Name	Tph1
UniProt Synonym Gene Names	Tph
UniProt Entry Name	TPH1_MOUSE
NCBI Protein Information	tryptophan 5-hydroxylase 1
NCBI Summary for TPH1	This gene encodes a member of the biopterin-dependent aromatic amino acid hydroxylase family. The encoded protein is one of two tryptophan hydroxylase enzymes that catalyze the first and rate limiting step in the biosynthesis of the hormone and neurotransmitter, serotonin. This gene is expressed in peripheral organs, while tryptophan hydroxylase 2 is expressed in neurons. The encoded protein is involved in the development of hypoxia-induced elevations in pulmonary pressures and pulmonary vascular remodeling, and has also been implicated as a regulator of immune tolerance. Disruption of this gene is associated with cardiac dysfunction. Alternative splicing results in multiple transcript variants. [provided by RefSeq, Feb 2013]
UniProt Comments for TPH1	TPH1: an enzyme that is rate-limiting in the biosynthesis of serotonin. It catalyzes the biopterin dependent monooxygenation of tryptophan to 5-hydroxytryptophan (5HT), which is subsequently decarboxylated to form the neurotransmitter serotonin. Its expression is limited to a few specialized tissues: raphe neurons, pinealocytes, mast cells, mononuclear leukocytes, beta-cells of the islets of Langerhans, and intestinal and pancreatic enterochromaffin cells. Two alternatively spliced isoforms have been described. Protein type: EC 1.14.16.4; Amino Acid Metabolism - tryptophan; Oxidoreductase Cellular Component: neuron projection; cytoplasm Molecular Function: amino acid binding; oxidoreductase activity, acting on paired donors, with incorporation or reduction of molecular oxygen, reduced pteridine as one donor, and incorporation of one atom of oxygen; tryptophan 5-monooxygenase activity; iron ion binding; metal ion binding; oxidoreductase activity; monooxygenase activity Biological Process: aromatic amino acid family metabolic process; metabolic process; negative regulation of ossification; positive regulation of fat cell differentiation; bone remodeling; serotonin biosynthetic process
Research Articles on TPH1	**1.** Tph1-deficient mice fed a high-fat diet (HFD) are protected from obesity, insulin resistance and nonalcoholic fatty liver disease (NAFLD) while exhibiting greater energy expenditure by brown adipose tissue.
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