HPD siRNA – 4-Hydroxyphenylpyruvate Dioxygenase Isoform 2 (Human)

PRODUCT OVERVIEW

Product Name	HPD, siRNA
Full Product Name	HPD siRNA (Human)
Product Gene Name	HPD sirna
Product Synonym Names	PPD; 4-hydroxyphenylpyruvate dioxygenase; 4-hydroxyphenylpyruvic acid oxidase; 4HPPD; HPD; HPPDase
Host	Synthetic
Species Reactivity	Human
Form/Format	Lyophilized powder
Purity/Purification	> 97%
Specificity	HPD 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	40,497 Da
OMIM	140350
3D Structure	ModBase 3D Structure for P32754
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 HPD 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 HPD sirna	RNA Interference (RNAi)
Related Product Information for HPD sirna	MBS8206999 is an siRNA targeting HPD. Also known as HPD siRNA (Human). Reactive in Human. Host: Synthetic. siRNA to inhibit HPD expression using RNA interference
Other Notes	Small volumes of HPD 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 HPD. It may not necessarily be applicable to this product.

NCBI GI #	285002264
NCBI GeneID	3242
NCBI Accession #	NP_001165464.1
UniProt Primary Accession #	P32754
UniProt Secondary Accession #	Q13234; A8K461; B3KQ63
UniProt Related Accession #	P32754
GenBank Nucleotide #	NM_001171993.1
NCBI Official Full Name	4-hydroxyphenylpyruvate dioxygenase isoform 2
NCBI Official Synonym Full Names	4-hydroxyphenylpyruvate dioxygenase
NCBI Official Symbol	HPD
NCBI Official Synonym Symbols	PPD; 4HPPD; GLOD3; 4-HPPD; HPPDASE
UniProt Protein Name	4-hydroxyphenylpyruvate dioxygenase
UniProt Synonym Protein Names	4-hydroxyphenylpyruvic acid oxidase; 4HPPD; HPD; HPPDase
Protein Family	Probable 4-hydroxyphenylpyruvate dioxygenase
UniProt Gene Name	HPD
UniProt Synonym Gene Names	PPD; 4HPPD; HPD; HPPDase
UniProt Entry Name	HPPD_HUMAN
NCBI Protein Information	4-hydroxyphenylpyruvate dioxygenase
NCBI Summary for HPD	The protein encoded by this gene is an enzyme in the catabolic pathway of tyrosine. The encoded protein catalyzes the conversion of 4-hydroxyphenylpyruvate to homogentisate. Defects in this gene are a cause of tyrosinemia type 3 (TYRO3) and hawkinsinuria (HAWK). Two transcript variants encoding different isoforms have been found for this gene. [provided by RefSeq, Jan 2010]
UniProt Comments for HPD	HPD: Key enzyme in the degradation of tyrosine. Defects in HPD are the cause of tyrosinemia type 3 (TYRO3). TYRO3 is an inborn error of metabolism characterized by elevations of tyrosine in the blood and urine, seizures and mild mental retardation. Defects in HPD are a cause of hawkinsinuria (HAWK). HAWK is an inborn error of tyrosine metabolism characterized by failure to thrive, persistent metabolic acidosis, fine and sparse hair, and excretion of the unusual cyclic amino acid metabolite, hawkinsin, in the urine. Belongs to the 4HPPD family. 2 isoforms of the human protein are produced by alternative splicing. Protein type: EC 1.13.11.27; Amino Acid Metabolism - tyrosine; Cofactor and Vitamin Metabolism - ubiquinone and other terpenoid-quinone biosynthesis; Oxidoreductase; Amino Acid Metabolism - phenylalanine Chromosomal Location of Human Ortholog: 12q24.31 Cellular Component: cytosol Molecular Function: 4-hydroxyphenylpyruvate dioxygenase activity; metal ion binding Biological Process: L-phenylalanine catabolic process; tyrosine catabolic process Disease: Hawkinsinuria; Tyrosinemia, Type Iii
Research Articles on HPD	**1.** Glutamine375 has a critical role for 4-HPPD in orientating the tail and ensuring the conformation of the terminal alpha-helix of the enzyme to maintain the integrity of the active site for biocatalysis.

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