P4HB siRNA – Protein Disulfide-Isomerase (Mouse)

PRODUCT OVERVIEW

Product Name	P4HB, siRNA
Full Product Name	P4HB siRNA (Mouse)
Product Gene Name	P4HB sirna
Product Synonym Names	PDIA1; Protein disulfide-isomerase; PDI; Cellular thyroid hormone-binding protein; Endoplasmic reticulum resident protein 59; ER protein 59; ERp59; Prolyl 4-hydroxylase subunit beta; p55
Host	Synthetic
Species Reactivity	Mouse
Form/Format	Lyophilized powder
Purity/Purification	> 97%
Specificity	P4HB 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	57,058 Da
3D Structure	ModBase 3D Structure for P09103
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 P4HB 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 P4HB sirna	RNA Interference (RNAi)
Related Product Information for P4HB sirna	MBS8219214 is an siRNA targeting P4HB. Also known as P4HB siRNA (Mouse). Reactive in Mouse. Host: Synthetic. siRNA to inhibit P4HB expression using RNA interference
Other Notes	Small volumes of P4HB 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 P4HB. It may not necessarily be applicable to this product.

NCBI GI #	42415475

NCBI GeneID	18453
NCBI Accession #	NP_035162.1
UniProt Primary Accession #	P09103
UniProt Secondary Accession #	Q922C8
UniProt Related Accession #	P09103
GenBank Nucleotide #	NM_011032.2
NCBI Official Full Name	protein disulfide-isomerase
NCBI Official Synonym Full Names	prolyl 4-hydroxylase, beta polypeptide
NCBI Official Symbol	P4hb
NCBI Official Synonym Symbols	PDI; Thbp; ERp59; Pdia1
UniProt Protein Name	Protein disulfide-isomerase
UniProt Synonym Protein Names	Cellular thyroid hormone-binding protein; Endoplasmic reticulum resident protein 59; ER protein 59; ERp59; Prolyl 4-hydroxylase subunit beta; p55
UniProt Gene Name	P4hb
UniProt Synonym Gene Names	Pdia1; PDI; ER protein 59; ERp59
UniProt Entry Name	PDIA1_MOUSE
NCBI Protein Information	protein disulfide-isomerase
UniProt Comments for P4HB	PDIA1: This multifunctional protein catalyzes the formation, breakage and rearrangement of disulfide bonds. At the cell surface, seems to act as a reductase that cleaves disulfide bonds of proteins attached to the cell. May therefore cause structural modifications of exofacial proteins. Inside the cell, seems to form/rearrange disulfide bonds of nascent proteins. At high concentrations, functions as a chaperone that inhibits aggregation of misfolded proteins. At low concentrations, facilitates aggregation (anti-chaperone activity). May be involved with other chaperones in the structural modification of the TG precursor in hormone biogenesis. Also acts a structural subunit of various enzymes such as prolyl 4-hydroxylase and microsomal triacylglycerol transfer protein MTTP. Homodimer. Monomers and homotetramers may also occur. Also constitutes the structural subunit of prolyl 4-hydroxylase and of the microsomal triacylglycerol transfer protein MTTP in mammalian cells. Stabilizes both enzymes and retain them in the ER without contributing to the catalytic activity. Binds UBQLN1. Binds to CD4, and upon HIV-1 binding to the cell membrane, is part of a P4HB/PDI-CD4-CXCR4-gp120 complex. Belongs to the protein disulfide isomerase family. Protein type: Nuclear receptor co-regulator; Endoplasmic reticulum; Isomerase; EC 5.3.4.1; Oxidoreductase Cellular Component: focal adhesion; membrane; endoplasmic reticulum; ER-Golgi intermediate compartment; plasma membrane Molecular Function: enzyme binding; procollagen-proline 4-dioxygenase activity; protein heterodimerization activity; protein disulfide isomerase activity; isomerase activity; peptidyl-proline 4-dioxygenase activity Biological Process: protein folding; cell redox homeostasis; peptidyl-proline hydroxylation to 4-hydroxy-L-proline
Research Articles on P4HB	**1.** Neutrophil surface PDI is important for alphaMbeta2 integrin-mediated adhesion of human neutrophils under shear and static conditions and for binding of soluble fibrinogen to activated alphaMbeta2 integrin.
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