RPE65 siRNA – Retinoid Isomerohydrolase (Mouse)

PRODUCT OVERVIEW

Product Name	RPE65, siRNA
Full Product Name	RPE65 siRNA (Mouse)
Product Gene Name	RPE65 sirna
Product Synonym Names	Retinoid isomerohydrolase; All-trans-retinyl-palmitate hydrolase; Retinal pigment epithelium-specific 65 kDa protein; Retinol isomerase
Host	Synthetic
Species Reactivity	Mouse
Form/Format	Lyophilized powder
Purity/Purification	> 97%
Specificity	RPE65 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	61,085 Da
3D Structure	ModBase 3D Structure for Q91ZQ5
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 RPE65 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 RPE65 sirna	RNA Interference (RNAi)
Related Product Information for RPE65 sirna	MBS8206173 is an siRNA targeting RPE65. Also known as RPE65 siRNA (Mouse). Reactive in Mouse. Host: Synthetic. siRNA to inhibit RPE65 expression using RNA interference
Other Notes	Small volumes of RPE65 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 RPE65. It may not necessarily be applicable to this product.

NCBI GI #	147902089

NCBI GeneID	19892
NCBI Accession #	NP_084263.2
UniProt Primary Accession #	Q91ZQ5
UniProt Secondary Accession #	Q8VHP2; A1L3D1; E9QNS6; H9KUX9
UniProt Related Accession #	Q91ZQ5
GenBank Nucleotide #	NM_029987.2
NCBI Official Full Name	retinoid isomerohydrolase
NCBI Official Synonym Full Names	retinal pigment epithelium 65
NCBI Official Symbol	Rpe65
NCBI Official Synonym Symbols	LCA2; RP20; rd12; 65kDa; Mord1; A930029L06Rik
UniProt Protein Name	Retinoid isomerohydrolase
UniProt Synonym Protein Names	All-trans-retinyl-palmitate hydrolase; Retinal pigment epithelium-specific 65 kDa protein; Retinol isomerase
UniProt Gene Name	Rpe65
UniProt Entry Name	RPE65_MOUSE
NCBI Protein Information	retinoid isomerohydrolase
UniProt Comments for RPE65	RPE65: Plays important roles in the production of 11-cis retinal and in visual pigment regeneration. The soluble form binds vitamin A (all-trans-retinol), making it available for LRAT processing to all-trans-retinyl ester. The membrane form, palmitoylated by LRAT, binds all-trans-retinyl esters, making them available for IMH (isomerohydrolase) processing to all-cis- retinol. The soluble form is regenerated by transferring its palmitoyl groups onto 11-cis-retinol, a reaction catalyzed by LRAT. The enzymatic activity is linearly dependent of the expression levels and membrane association. Defects in RPE65 are the cause of Leber congenital amaurosis type 2 (LCA2). LCA designates a clinically and genetically heterogeneous group of childhood retinal degenerations, generally inherited in an autosomal recessive manner. Affected infants have little or no retinal photoreceptor function as tested by electroretinography. LCA represents the most common genetic cause of congenital visual impairment in infants and children. Defects in RPE65 are the cause of retinitis pigmentosa type 20 (RP20). RP leads to degeneration of retinal photoreceptor cells. Patients typically have night vision blindness and loss of midperipheral visual field. As their condition progresses, they lose their far peripheral visual field and eventually central vision as well. Defects in RPE65 are a cause of autosomal dominant retinitis pigmentosa with choroidal involvement (PubMed:21654732). Affected individuals show reduction of central vision, constriction of visual fields, night blindness and chorioretinal atrophy. Belongs to the carotenoid oxygenase family. Protein type: EC 3.1.1.64; Cofactor and Vitamin Metabolism - retinol Cellular Component: membrane; intracellular membrane-bound organelle; endoplasmic reticulum; cytoplasm; plasma membrane Molecular Function: hydrolase activity; retinal isomerase activity; metal ion binding; isomerase activity Biological Process: retinal homeostasis; retinal metabolic process; visual perception; retinol metabolic process; retina development in camera-type eye; response to stimulus; insulin receptor signaling pathway; detection of light stimulus involved in visual perception; regulation of rhodopsin gene expression; retina morphogenesis in camera-type eye
Research Articles on RPE65	**1.** properties of disease causing RPE65 with regard to molecular pathogenic mechanism
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