Lecithin Retinol Acyltransferase (LRAT) Human Recombinant Protein

PRODUCT OVERVIEW

Product Name	Lecithin retinol acyltransferase (LRAT), Recombinant Protein
Full Product Name	Recombinant Human Lecithin retinol acyltransferase (LRAT)
Product Gene Name	LRAT recombinant protein
Product Synonym Names	Lecithin retinol acyltransferase; EC=2.3.1.135; Phosphatidylcholine--retinol O-acyltransferase
Sequence	MKNPMLEVVS LLLEKLLLIS NFTLFSSGAA GEDKGRNSFY ETSSFHRGDV LEVPRTHLTH YGIYLGDNRV AHMMPDILLA LTDDMGRTQK VVSNKRLILG VIVKVASIRV DTVEDFAYGA NILVNHLDES LQKKALLNEE VARRAEKLLG FTPYSLLWNN CEHFVTYCRY GTPISPQSDK FCETVKIIIR DQRS
Host	E Coli or Yeast or Baculovirus or Mammalian Cell
Form/Format	Lyophilized or liquid (Format to be determined during the manufacturing process)
Purity/Purification	Greater or equal to 85% purity as determined by SDS-PAGE. (lot specific)
Preparation and Storage	Store at -20 degrees C. For long-term storage, store at -20 degrees C or -80 degrees C. Store working aliquots at 4 degrees C for up to one week. Repeated freezing and thawing is not recommended.
Molecular Weight	25,703 Da
Sequence Positions	1-194
Tag Information	This protein contains an N-terminal tag and may also contain a C-terminal tag. Tag types are determined by various factors including tag-protein stability, please inquire for tag information.
Sterility	Sterile filter available upon request.
Endotoxin	Low endotoxin available upon request.
OMIM	gene 613341
3D Structure	ModBase 3D Structure for O95237
Species	Homo sapiens (Human)
ISO Certification	Manufactured in an ISO 9001:2015 Certified Laboratory.
Related Product Information for LRAT recombinant protein	MBS1228013 is a recombinant protein targeting LRAT. Also known as Recombinant Human Lecithin retinol acyltransferase (LRAT). Host: E Coli or Yeast or Baculovirus or Mammalian Cell.
Other Notes	Small volumes of LRAT recombinant protein 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 LRAT. It may not necessarily be applicable to this product.

NCBI GI #	46249410
NCBI GeneID	9227
NCBI Accession #	NP_004735.2
UniProt Primary Accession #	O95237
UniProt Secondary Accession #	Q8N716; A8K983

UniProt Related Accession #	O95237
GenBank Nucleotide #	NM_004744.4
NCBI Official Full Name	lecithin retinol acyltransferase
NCBI Official Synonym Full Names	lecithin retinol acyltransferase (phosphatidylcholine--retinol O-acyltransferase)
NCBI Official Symbol	LRAT
NCBI Official Synonym Symbols	LCA14
UniProt Protein Name	Lecithin retinol acyltransferase
UniProt Synonym Protein Names	Phosphatidylcholine--retinol O-acyltransferase
Protein Family	Lecithin retinol acyltransferase
UniProt Gene Name	LRAT
UniProt Entry Name	LRAT_HUMAN
NCBI Protein Information	lecithin retinol acyltransferase
NCBI Summary for LRAT	The protein encoded by this gene localizes to the endoplasmic reticulum, where it catalyzes the esterification of all-trans-retinol into all-trans-retinyl ester. This reaction is an important step in vitamin A metabolism in the visual system. Mutations in this gene have been associated with early-onset severe retinal dystrophy and Leber congenital amaurosis 14. Alternative splicing results in multiple transcript variants. [provided by RefSeq, Aug 2014]
UniProt Comments for LRAT	LRAT: Transfers the acyl group from the sn-1 position of phosphatidylcholine to all-trans retinol, producing all-trans retinyl esters. Retinyl esters are storage forms of vitamin A. LRAT plays a critical role in vision. It provides the all-trans retinyl ester substrates for the isomerohydrolase which processes the esters into 11-cis-retinol in the retinal pigment epithelium; due to a membrane-associated alcohol dehydrogenase, 11 cis-retinol is oxidized and converted into 11-cis-retinaldehyde which is the chromophore for rhodopsin and the cone photopigments. Defects in LRAT are a cause of Leber congenital amaurosis type 14 (LCA14). It is a severe dystrophy of the retina, typically becoming evident in the first years of life. Visual function is usually poor and often accompanied by nystagmus, sluggish or near-absent pupillary responses, photophobia, high hyperopia and keratoconus. Belongs to the H-rev107 family. Protein type: EC 2.3.1.135; Transferase; Cofactor and Vitamin Metabolism - retinol; Membrane protein, integral Chromosomal Location of Human Ortholog: 4q32.1 Cellular Component: multivesicular body; endoplasmic reticulum membrane; rough endoplasmic reticulum; perinuclear region of cytoplasm; integral to membrane Molecular Function: retinoic acid binding; transferase activity, transferring acyl groups; retinol binding; phosphatidylcholine-retinol O-acyltransferase activity Biological Process: positive regulation of lipid transport; phototransduction, visible light; visual perception; retinol metabolic process; retinoic acid metabolic process; retinoid metabolic process; vitamin A metabolic process Disease: Retinitis Pigmentosa; Leber Congenital Amaurosis 14
Research Articles on LRAT	**1.** Lecithin-retinol acyltransferase is a thermostable and highly active enzyme with a likely mode of interfacial activation.
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