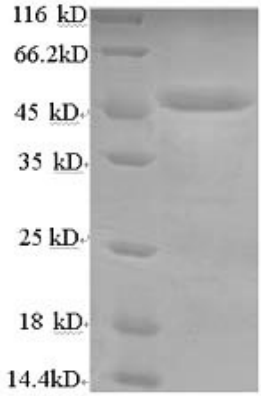
Recombinant Human Lysosomal acid lipase/cholesteryl ester hydrolase (LIPA)

Product Code	CSB-EP012972HU
Relevance	Crucial for the intracellular hydrolysis of cholesteryl esters and triglycerides that have been internalized via receptor-mediated endocytosis of lipoprotein particles. Important in mediating the effect of LDL (low density lipoprotein) uptake on suppression of hydroxymethylglutaryl-CoA reductase and activation of endogenous cellular cholesteryl ester formation.
Abbreviation	Recombinant Human LIPA protein
Storage	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.
Uniprot No.	P38571
Alias	Cholesteryl esteraseLipase ASterol esterase
Product Type	Recombinant Protein
Immunogen Species	Homo sapiens (Human)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	SGGKLTAVDPETNMNVSEIISYWGFPSEEYLVETEDGYILCLNRIPHGRKNHSD KGPKPVVFLQHGLLADSSNWVTNLANSSLGFILADAGFDVWMGNSRGNTWS RKHKTLSVSQDEFWAFSYDEMAKYDLPASINFILNKTGQEQVYYVGHSQGTTI GFIAFSQIPELAKRIKMFFALGPVASVAFCTSPMAKLGRLPDHLIKDLFGDKEFL PQSAFLKWLGTHVCTHVILKELCGNLCFLLCGFNERNLNMSRVDVYTTHSPAG TSVQNMLHWSQAVKFQKFQAFDWGSSAKNYFHYNQSYPPTYNVKDMLVPTA VWSGGHDWLADVYDVNILLTQITNLVFHESIPEWEHLDFIWGLDAPWRLYNKII NLMRKYQ
Research Area	Metabolism
Source	E.coli
Target Names	LIPA
Expression Region	22-399aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal GST-tagged
Mol. Weight	70.0kDa
Protein Length	Full Length of Mature Protein
Image	



(Tris-Glycine gel) Discontinuous SDS-PAGE (reduced) with 5% enrichment gel and 15% separation gel.

Description

The synthesis of the recombinant plasmid containing the gene encoding the human lysosomal acid lipase/cholesteryl ester hydrolase (LIPA) protein (22-399aa) and the N-terminal GST-tag gene is the first step to produce the recombinant human LIPA protein. After that, the recombinant plasmid is transformed into E.coli cells. E.coli cells enduring a specific antibiotic are selected, demonstrating successful uptake of the recombinant plasmid. The E.coli cells containing the recombinant plasmid are cultured under conditions that encourage the expression of the gene of interest. Following expression, affinity purification is employed to isolate and purify the recombinant human LIPA protein from the cell lysate. Denaturing SDS-PAGE is applied to resolve the resulting recombinant human LIPA protein, indicating a purity level exceeding 90%.

Lysosomal acid lipase (LIPA), also known as lipoyl synthase (LipA), is a key player in several body processes. It's mainly in charge of breaking down certain fats from LDL cholesterol, helping prevent excess fat buildup [1]. LipA also helps make lipoic acid, a substance crucial for certain protein functions in the body [2][3]. It's like a builder, adding sulfur atoms to certain proteins to make them work properly [3]. Plus, it helps put together an important enzyme complex involved in energy production [4]. LipA belongs to a group of enzymes called the radical S-adenosylmethionine (SAM) superfamily, using a specific molecule to kickstart its activity [5].

Besides its role in fat metabolism, LipA is needed to make lipoic acid from scratch and might be involved in breaking down plant cell walls and sparking early immune responses [6]. In our immune cells, a gene called LAL, which makes LIPA, is really important, and scientists are trying to understand exactly how it works [7]. Certain drugs that target LIPA have shown promise in reducing fat buildup in certain diseases [8]. Also, LIPA might have a role in the formation of abnormal protein deposits seen in diseases like Parkinson's [9].

References:
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Reconstitution

We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Please reconstitute protein in deionized sterile water to a concentration of 0.1-1.0 mg/mL.We recommend to add 5-50% of glycerol (final concentration) and aliquot for long-term storage at -20°C/-80°C. Our default final concentration of glycerol is 50%. Customers could use it as reference.

Shelf Life

The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself.
Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.