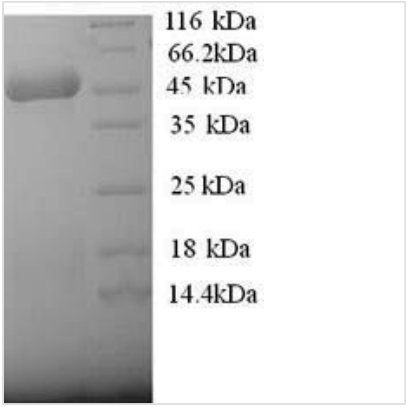
Recombinant Human 3-ketoacyl-CoA thiolase, mitochondrial (ACAA2), partial

Product Code	CSB-YP001118HU
Relevance	Abolishes BNIP3-mediated apoptosis and mitochondrial damage.
Abbreviation	Recombinant Human ACAA2 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.	P42765
Alias	Acetyl-CoA acyltrans feraseBeta-ketothiolase;Mitochondrial 3-oxoacyl-CoA thiolaseT1
Product Type	Recombinant Protein
Immunogen Species	Homo sapiens (Human)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	FGAYGGLLKDFTATDLSEFAAKAALSAGKVSPETVDSVIMGNVLQSSSDAIYLA RHVGLRVGIPKETPALTINRLCGSGFQSIVNGCQEICVKEAEVVLCGGTESMS QAPYCVRNVRFGTKLGSDIKLEDSLWVSLTDQHVQLPMAMTAENLAVKHKISR EECDKYALQSQQRWKAANDAGYFNDEMAPIEVKTKKGKQTMQVDEHARPQT TLEQLQKLPPVFKKDGTVTAGNASGVADGAGAVIIASEDAVKKHNFTPLARIVG YFVSGCDPSIMGIGPVPAISGALKKAGLSLKDMDLVEVNEAFAPQYLAVERSLD LDISKTNVNGGAIALGHPLGGSGSRITAHLVHELRRRGGKYAVGSACIGGGQGI AVIIQSTA
Research Area	Metabolism
Source	Yeast
Target Names	ACAA2
Protein Names	Recommended name: 3-ketoacyl-CoA thiolase, mitochondrial EC= 2.3.1.16 Alternative name(s): Acetyl-CoA acyltransferase Beta-ketothiolase Mitochondrial 3-oxoacyl-CoA thiolase T1
Expression Region	17-397aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 6xHis-tagged
Mol. Weight	42.2kDa
Protein Length	Partial
Image	



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

Description

The process of producing recombinant human 3-ketoacyl-CoA thiolase, mitochondrial (ACAA2) in yeast involves co-cloning the gene of interest (17-397aa of human ACAA2) into an expression vector with an N-terminal 6xHis-tag gene and transforming it into yeast cells. The yeast cells are cultured under conditions that induce protein expression. Once adequate growth is achieved, the cells are lysed to release the recombinant ACAA2 protein. Purification is carried out using affinity chromatography. The purity of the recombinant ACAA2 protein is confirmed using SDS-PAGE, exceeding 90%.

Human ACAA2 is an enzyme is an enzyme crucial for fatty acid metabolism. ACAA2 is primarily involved in mitochondrial fatty acid elongation and degradation by catalyzing the final step of the β-oxidation pathway [1][2][3]. It is essential for converting long-chain fatty acids into acyl-CoAs, the active form utilized in cellular lipid synthesis and degradation through beta-oxidation [4]. As a liver enzyme, ACAA2 contributes to acetyl-CoA generation in mitochondria, crucial for tricarboxylic acid (TCA) cycle activity [1].

ACAA2 also exerts different roles in different contexts. For example, ACAA2 acts as a tumor suppressor in renal cell carcinoma, linked to increased immune infiltration and elevated PD-1 expression in CD8+ T cells [5]. Studies associate ACAA2 with regulating fatty acid metabolism, particularly polyunsaturated fatty acids (PUFAs), affecting lipid concentrations and cardiovascular risk factors [6][4]. Furthermore, ACAA2 is linked to protection against acetaminophen-induced hepatotoxicity through transcriptional upregulation by Egr1 [7].

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

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