Recombinant THIM protein (His tag)

Catalog Number	544609
Synonyms	Acetyl-CoA acetyltransferase; Acetyl-CoA acyltransferase; Acyl-CoA hydrolase, mitochondrial; Beta-ketothiolase; Mitochondrial 3-oxoacyl-CoA thiolase; T1
Species	Human
Expression System	E. coli
Accession	P42765
Molecular Weight	Predictes a molecular mass of 43.58 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 44 kDa band.

Product Information

Sequence Region	1-397
Form	Lyophilized powder
Formulation	Lyophilized from sterile PBS, pH 7.4
Purity	>87%, by SDS-PAGE with Coomassie Brilliant Blue staining.
Endotoxin	Not tested.
Activity	Not tested.
Stability	Samples are stable for up to twelve months from date of receipt at -70℃
Protein Construction	DNA encoding 1-397 aa (P42765) were fused with 6His tag.

Storage & Handling

Reconstitution	Reconstitute at 0.25 μg/μl in sterile water for short-term storage. Reconstitution with 50% glycerol solution is recommended for longer term storage (see Stability and Storage for more details). If a different concentration is needed for your purposes please adjust the reconstitution volume as required (please note: the ion concentration of the final solution will vary according to the volume used). Note: Centrifuge vial before opening. When reconstituting, gently pipet and wash down the sides of the vial to ensure full recovery of the protein into solution.
Storage	Store it under sterile conditions at -20℃ to -80℃. It is recommended that the protein be aliquoted for optimal storage. Avoid repeated freeze-thaw cycles.
Shipping	In general, recombinant proteins are provided as lyophilized powder which are shipped at ambient temperature. Bulk packages of recombinant proteins are provided as frozen liquid. They are shipped out with blue ice unless customers require otherwise.

Description

Description	Recombinant human 3-ketoacyl-CoA thiolase, mitochondrial (ACAA2) fragment (residues 1-397) is a high-purity protein designed for structural and biochemical studies. This fragment represents a stable, soluble unit of the enzyme, which plays a critical role in mitochondrial beta-oxidation—the final step in fatty acid energy production—and exhibits additional hydrolase activity. The full-length 3-ketoacyl-CoA thiolase (ACAA2) is a mitochondrial enzyme essential for energy metabolism. It catalyzes the thiolytic cleavage of medium- to long-chain 3-oxoacyl-CoAs into acetyl-CoA and a shortened acyl-CoA during beta-oxidation, facilitating aerobic fatty acid breakdown. Additionally, it can condense acetyl-CoA into acetoacetyl-CoA, potentially contributing to ketone body synthesis, and displays hydrolase activity on various fatty acyl-CoAs, which may produce acetate as a side reaction. Beyond metabolism, ACAA2 has been implicated in regulating apoptosis by counteracting BNIP3-mediated mitochondrial damage. The protein is localized exclusively in the mitochondrion, underscoring its role in cellular energy homeostasis.