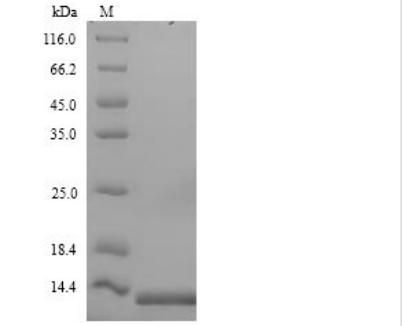
Recombinant Saccharomyces cerevisiae Acyl-CoA-binding protein (ACB1)

Product Code	CSB-YP006519SVG
Relevance	Binds medium- and long-chain acyl-CoA esters with very high affinity and may function as an intracellular carrier of acyl-CoA esters.
Abbreviation	Recombinant Saccharomyces cerevisiae ACB1 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.	P31787
Alias	Short name:ACBP
Product Type	Recombinant Protein
Immunogen Species	Saccharomyces cerevisiae (strain ATCC 204508 / S288c) (Baker's yeast)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	MVSQLFEEKAKAVNELPTKPSTDELLELYALYKQATVGDNDKEKPGIFNMKDR YKWEAWENLKGKSQEDAEKEYIALVDQLIAKYSS
Research Area	Others
Source	Yeast
Target Names	ACB1
Protein Names	Recommended name: Acyl-CoA-binding protein Short name= ACBP
Expression Region	1-87aa
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	12.1kDa
Protein Length	Full Length
Image	



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

Description

Recombinant Saccharomyces cerevisiae Acyl-CoA-binding protein (ACB1) is expressed in yeast and includes an N-terminal 6xHis tag for efficient purification. This full-length protein spans amino acids 1-87 and shows purity greater than 90% as confirmed by SDS-PAGE. Intended for research use only, it appears to be a reliable tool for various biochemical assays, with low endotoxin levels that make it suitable for sensitive applications.

The Acyl-CoA-binding protein (ACB1) from Saccharomyces cerevisiae likely plays a crucial role in intracellular lipid metabolism. It participates in the binding and transport of acyl-CoA esters, supporting key processes in lipid biosynthesis and degradation. Given its fundamental role in lipid homeostasis, ACB1 has become an important focus in research studying metabolic pathways in eukaryotic cells, particularly in yeast models.

Potential Applications

Note: The applications listed below are based on what we know about this protein's biological functions, published research, and experience from experts in the field. However, we haven't fully tested all of these applications ourselves yet. We'd recommend running some preliminary tests first to make sure they work for your specific research goals.

1. Lipid Metabolism Research and Acyl-CoA Binding Studies

This recombinant ACB1 protein can be used to investigate acyl-CoA binding specificity and affinity in yeast lipid metabolism pathways. Researchers may perform in vitro binding assays to characterize how the protein interacts with different acyl-CoA species and determine binding kinetics. The N-terminal 6xHis tag simplifies purification and immobilization for surface plasmon resonance or other biophysical binding studies. Such experiments would contribute to understanding how acyl-CoA-binding proteins function in cellular lipid homeostasis and fatty acid metabolism regulation.

2. Protein-Protein Interaction Studies

Recombinant ACB1 can serve as bait or prey in pull-down assays to identify novel protein interaction partners involved in yeast metabolism. The 6xHis tag allows efficient capture using nickel-affinity resins, permitting co-purification of

interacting proteins for mass spectrometry analysis. These studies might reveal new components of lipid metabolic complexes or regulatory networks in Saccharomyces cerevisiae. Interaction mapping experiments like these are valuable for constructing comprehensive protein interaction networks related to cellular metabolism.

3. Antibody Development and Validation

This purified recombinant protein can function as an antigen for generating specific antibodies against yeast ACB1. The high purity (>90%) makes it suitable for immunizing animals or screening hybridoma clones for antibody production. Researchers can use the protein in ELISA-based assays to validate antibody specificity and determine optimal working concentrations. The 6xHis tag also provides tag-specific detection methods to confirm protein expression and localization in experimental systems.

4. Comparative Protein Structure and Function Analysis

Recombinant ACB1 may be used in comparative studies with acyl-CoA-binding proteins from other species to understand evolutionary conservation and functional differences. Researchers can perform structural characterization using techniques such as circular dichroism spectroscopy or NMR to analyze protein folding and stability. Cross-species binding assays might reveal differences in substrate specificity or binding affinity that could reflect evolutionary adaptations. These comparative studies contribute to understanding the functional evolution of lipid-binding proteins across different organisms.

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.