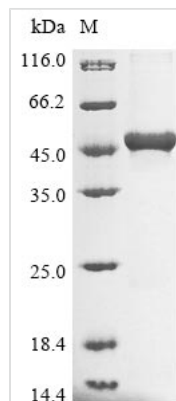




Recombinant Escherichia coli 3-demethoxyubiquinol 3-hydroxylase (ubiF)

Product Code	CSB-EP301152ENV
Abbreviation	Recombinant E.coli ubiF 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.	P75728
Form	Liquid or Lyophilized powder
Storage Buffer	If the delivery form is liquid, the default storage buffer is Tris/PBS-based buffer, 5%-50% glycerol. If the delivery form is lyophilized powder, the buffer before lyophilization is Tris/PBS-based buffer, 6% Trehalose.
Product Type	Recombinant Protein
Immunogen Species	Escherichia coli (strain K12)
Purity	Greater than 85% as determined by SDS-PAGE.
Sequence	MTNQPTIEIAIVGGGMVGGALALGLAQHGFAVTVIEHAEPAPFVADSQPDVRIS AISAASVSLLKGLGVWDAVQAMRCHPYRRLETWEWETAHVVFDAELKLPLL GYMVENTVLQQALWQALEAHPKVTLRVPGSLIALHRHDDLQELELKGGEVIRA KLVIGADGANSQVRQMAGIGVHAWQYAQSCMLISVQCENDPGDSTWQQFTP DGPRAFLPLFDNWASLVWYDSPARIRQLQNMNMAQLQAEIAKHFPSRLGYVT PLAAGAFPLTRRHALQYVQPGLALVGDAHTIHPLAGQGVNLGYRDVDALIDV LVNARSYGEAWASYPVLKRYQMRRMADNFIMQSGMDLFYAGFSNNLPPLRF MRNLGLMAAERAGVLKRQALKYALGL
Research Area	others
Source	E.coli
Target Names	ubiF
Expression Region	1-391aa
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	46.5 kDa
Protein Length	Full Length
Image	



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

Description

Recombinant *Escherichia coli* 3-demethoxyubiquinol 3-hydroxylase (ubiF) is expressed in *E. coli* and includes an N-terminal 6xHis-tag that makes purification more straightforward. The product contains the full-length protein from amino acids 1 to 391, reaching a purity greater than 85% as verified by SDS-PAGE. This protein is designed solely for research purposes and appears to be a reliable tool for scientific investigation.

3-demethoxyubiquinol 3-hydroxylase is an enzyme that participates in the biosynthesis of ubiquinone, also known as coenzyme Q. This protein plays what seems to be a crucial role in the electron transport chain, helping to drive cellular energy production. Its activity is likely essential for maintaining cellular respiration and metabolic efficiency, which makes it an important subject of study in microbial and biochemical research.

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. Ubiquinone Biosynthesis Pathway Studies

This recombinant ubiF protein may serve as a valuable tool for investigating the ubiquinone biosynthesis pathway in *E. coli* through in vitro biochemical assays. Researchers can potentially use this protein to study the enzymatic conversion of 3-demethoxyubiquinol to ubiquinol-8, which could help clarify the molecular mechanisms of this critical step in coenzyme Q biosynthesis. The full-length protein (1-391aa) provides what appears to be the complete functional domain architecture necessary for comprehensive structure-function relationship studies. Such research might contribute to understanding how bacteria synthesize this essential electron transport chain component.

2. Protein-Protein Interaction Studies

The N-terminal 6xHis tag allows for pull-down assays to identify potential protein partners that interact with ubiF in the ubiquinone biosynthesis machinery. This



approach could help map the protein interaction network involved in coenzyme Q production and identify regulatory proteins or enzyme complexes. The high purity (>85%) suggests reliable results in co-immunoprecipitation experiments and other interaction-based assays. These studies might reveal how ubiF integrates with other biosynthetic enzymes and cellular regulatory mechanisms.

3. Antibody Development and Validation

This purified recombinant protein can work as an immunogen for generating specific antibodies against E. coli ubiF, or as a standard for validating existing antibodies. The high purity and full-length nature of the protein make it suitable for immunization protocols and subsequent antibody characterization through ELISA, Western blotting, and other immunoassays. Such antibodies would likely be valuable research tools for studying ubiF expression levels, cellular localization, and regulation in various experimental conditions.

4. Comparative Enzymology and Evolution Studies

This recombinant ubiF protein can be used in comparative studies with homologous enzymes from other bacterial species to understand evolutionary relationships and functional conservation within the ubiquinone biosynthesis pathway. Researchers can perform side-by-side biochemical comparisons to identify conserved and divergent functional properties across different bacterial lineages. The standardized expression system and purification approach appears to make reproducible comparative analyses possible, which may inform our understanding of how this essential metabolic pathway has evolved.

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.