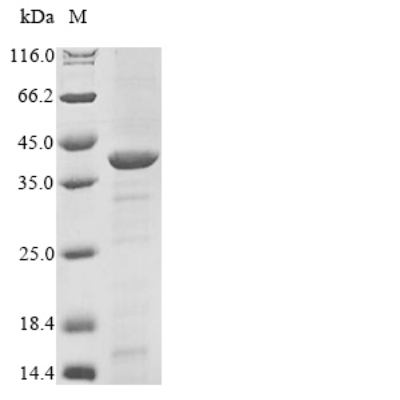
Recombinant Acinetobacter baumannii UDP-3-O-acyl-N-acetylglucosamine deacetylase (lpxC)

Product Code	CSB-EP460177AWO
Abbreviation	Recombinant Acinetobacter baumannii lpxC 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.	B2I1I9
Product Type	Recombinant Proteins
Immunogen Species	Acinetobacter baumannii (strain ACICU)
Purity	Greater than 85% as determined by SDS-PAGE.
Sequence	MVKQRTLNRVVKASGIGLHSGQKVMINFIPHTVDGGIVFRRIDLDPPVDIPANALLIQEAFMCSNLVTGDIKVGTIEHVMSAIAGLGIDNLIVEVSASEVPIMDGSAGPFIYLLMQGGLREQDAPKKFIKILKPVEALIDDKKAIFSPHNGFQLNFTIDFDHPAFAKEYQSATIDFSTETFVYEVSEARTFGFMKDLDYLKANNLALGASLDNAIGVDDTGVVNEEGLRFADEFVRHKILDAVGDLYLLGHQIIAKFDGYKSGHALNNQLLRNVQSDPSNYEIVTFDDEKDCPIPYVSVT
Research Area	Others
Source	E.coli
Target Names	lpxC
Protein Names	Recommended name: UDP-3-O-[3-hydroxymyristoyl] N-acetylglucosamine deacetylase EC= 3.5.1.-Alternative name(s): UDP-3-O-acyl-GlcNAc deacetylase
Expression Region	1-300aa
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	37.1 kDa
Protein Length	Full Length
Image	



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

Description

Recombinant Acinetobacter baumannii UDP-3-O-acyl-N-acetylglucosamine deacetylase (lpxC) is produced in E. coli with an N-terminal 6xHis tag to simplify purification. The protein is expressed as a full-length form, spanning amino acids 1 to 300. SDS-PAGE analysis confirms it reaches a purity level of greater than 85%, which appears to provide a high-quality reagent for experimental applications.

LpxC protein plays a crucial role in the lipid A biosynthesis pathway—a component of the bacterial outer membrane. As a deacetylase, it catalyzes the removal of an acetyl group from UDP-3-O-acyl-N-acetylglucosamine. This represents a key step in lipid A biosynthesis. Understanding this enzyme's activity may be essential for research into bacterial cell wall synthesis and potential antibiotic target development.

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. Biochemical Characterization and Enzyme Kinetics Studies

This recombinant lpxC protein can be used to investigate the fundamental biochemical properties of UDP-3-O-acyl-N-acetylglucosamine deacetylase from Acinetobacter baumannii. Researchers can perform enzyme kinetics assays to determine parameters such as Km, Vmax, and optimal reaction conditions using appropriate substrates. The N-terminal 6xHis tag simplifies protein purification and quantification, making accurate concentration determination for kinetic studies more straightforward. Such studies would likely provide valuable insights into the catalytic mechanism and substrate specificity of this essential enzyme in lipid A biosynthesis.

2. Inhibitor Screening and Drug Discovery Research

The purified lpxC protein serves as a promising target for high-throughput screening of potential inhibitors in preclinical drug discovery programs.

Researchers can establish biochemical assays to test libraries of small molecules for their ability to inhibit lpxC enzymatic activity. The relatively high purity (>85%) suggests reliable and reproducible screening results with minimal interference from contaminants. This application appears particularly valuable given the clinical importance of Acinetobacter baumannii as a multidrug-resistant pathogen.

3. Antibody Development and Immunological Studies

The recombinant lpxC protein can serve as an immunogen for generating polyclonal or monoclonal antibodies specific to Acinetobacter baumannii lpxC. The N-terminal 6xHis tag makes purification and immobilization straightforward for antibody screening assays such as ELISA. These antibodies could subsequently be used in various research applications including Western blotting, immunoprecipitation, and bacterial detection studies. The full-length protein expression (1-300aa) suggests that antibodies generated will recognize native epitopes present in the wild-type enzyme.

4. Protein-Protein Interaction Studies

This recombinant lpxC protein can be applied in pull-down assays to identify potential protein partners or regulatory factors that interact with lpxC in Acinetobacter baumannii. The N-terminal 6xHis tag allows for immobilization on nickel-affinity matrices, making it possible to capture interacting proteins from bacterial lysates or purified protein libraries. Such studies could reveal important regulatory mechanisms or metabolic pathway connections involving lpxC. The sufficient purity level suggests that observed interactions are likely specific to lpxC rather than contaminating proteins.

Shelf Life

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