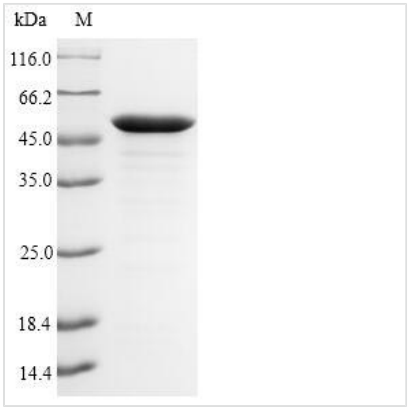
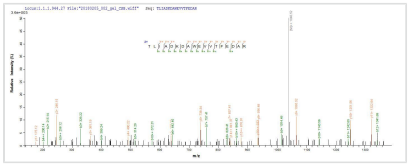
Recombinant Pseudomonas aeruginosa UDP-3-O-acyl-N-acetylglucosamine deacetylase (lpxC)

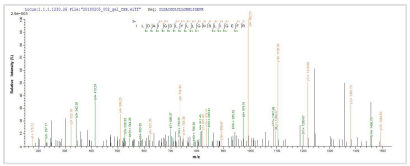
Product Code	CSB-EP342468EZX
Relevance	Catalyzes the hydrolysis of UDP-3-O-myristoyl-N-acetylglucosamine to form UDP-3-O-myristoylglucosamine and acetate, the committed step in lipid A biosynthesis.
Abbreviation	Recombinant Pseudomonas aeruginosa lpxC protein
Storage	The shelf life is related to many 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.	P47205
Alias	UDP-3-O-[R-3-hydroxymyristoyl]-N-acetylglucosamine deacetylase
Product Type	Recombinant Protein
Immunogen Species	Pseudomonas aeruginosa (strain ATCC 15692 / DSM 22644 / CIP 104116 / JCM 14847 / LMG 12228 / 1C / PRS 101 / PAO1)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	MIKQRTLKNIIRATGVGLHSGEKVYLTLKPAPVDTGIVFCRTDLDPVVEIPARAE NVGETTMSTTLVKGDVKVDTVEHLLSAMAGLGIDNAYVELSASEVPIMDGSAG PFVFLIQSAGLQEQEAAKKFIRIKREVSVEEGDKRAVFVPFDGFKVSFEIDFDHP VFRGRTQQASVDFSSTSFVKEVSRARTFGFMRDIEYLRSQNLALGGSVENAIV VDENRVLNEDGLRYEDEFVKHKILDAIGDLYLLGNSLIGEFRGFKSGHALNNQL LRTLIADKDAWEVVTFEDARTAPISYMRPAAAV
Research Area	Signal Transduction
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): Protein envA UDP-3-O-acyl-GlcNAc deacetylase
Expression Region	1-303aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 6xHis-SUMO-tagged
Mol. Weight	49.4kDa
Protein Length	Full Length
Image	



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



Based on the SEQUEST from database of E.coli host and target protein, the LC-MS/MS Analysis result of CSB-EP342468EZX could indicate that this peptide derived from E.coli-expressed Pseudomonas aeruginosa (strain ATCC 15692 / DSM 22644 / CIP 104116 / JCM 14847 / LMG 12228 / 1C / PRS 101 / PAO1) lpxC.



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Description

Recombinant Pseudomonas aeruginosa UDP-3-O-acyl-N-acetylglucosamine deacetylase (lpxC) gets expressed in E. coli and contains the complete 1-303 amino acid sequence. The protein carries an N-terminal 6xHis-SUMO tag, which appears to improve both solubility and purification efficiency. SDS-PAGE analysis indicates purity levels above 90%, suggesting this preparation should deliver reliable results in research settings. This product is intended strictly for research applications and may prove useful for detailed studies of bacterial biochemistry.

UDP-3-O-acyl-N-acetylglucosamine deacetylase—better known as lpxC—seems to be critical for lipid A biosynthesis, an important part of bacterial outer membrane structure. The enzyme handles the deacetylation step, which is likely essential for producing lipid A precursors. Getting a handle on lpxC activity could be valuable for research into how bacteria build their cell walls. This knowledge might also help in creating new approaches to combat bacterial infections.

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

Researchers can dig into the basic biochemical properties of this Pseudomonas aeruginosa deacetylase using this recombinant protein. Detailed kinetics work with purified substrate should reveal important parameters like Km, Vmax, and catalytic efficiency. The protein's high purity (>90%) and full-length design makes it well-suited for thorough structure-function studies. That N-terminal His-SUMO tag is handy—it streamlines purification and makes the protein easier to work with across different experimental setups.

2. Antibody Development and Immunological Studies

This recombinant lpxC protein works well as an antigen for creating antibodies specific to Pseudomonas aeruginosa UDP-3-O-acyl-N-acetylglucosamine deacetylase. Since it's the complete protein (1-303aa), researchers get access to all the antigenic epitopes needed for both polyclonal and monoclonal antibody production. Those antibodies can then be put to work in Western blotting, immunoprecipitation, and immunofluorescence experiments. The His-SUMO tag offers another advantage—it allows for tag-specific purification when screening antibodies.

3. Protein-Protein Interaction Studies

Pull-down assays and co-immunoprecipitation experiments become more straightforward with this recombinant protein. Researchers can hunt for binding partners or regulatory proteins that might interact with lpxC. The N-terminal His tag makes it simple to attach the protein to nickel-affinity matrices, which opens up systematic screening possibilities using bacterial lysates or purified protein collections. These interaction studies may shed light on the regulatory networks and metabolic pathways where this deacetylase operates in Pseudomonas aeruginosa.

4. Inhibitor Screening and Drug Discovery Research

This purified recombinant lpxC protein can serve as a target for testing potential enzyme inhibitors in research labs. Small molecule libraries might be screened against the protein to find compounds that affect its activity. The consistent purity and quality should mean reproducible results across multiple screening runs. This approach appears particularly useful for understanding how enzyme inhibition works at the molecular level and for creating research tools to study lipid A biosynthesis pathways.

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,

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