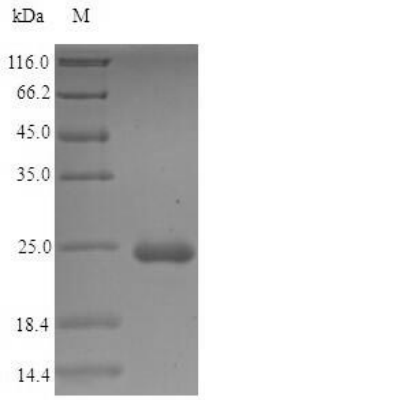
Recombinant Erwinia amylovora Major outer membrane lipoprotein (lpp)

Product Code	CSB-EP355906EMS
Relevance	Interacts with the peptidoglycan both covalently and noncovalently.
Abbreviation	Recombinant Erwinia amylovora lpp 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.	P02939
Alias	Murein-lipoprotein
Product Type	Recombinant Protein
Immunogen Species	Erwinia amylovora (Fire blight bacteria)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	CSSNAKIDQLSTDVQTLNAKVDQLSNDVTAIRSDVQAAKDDAARANQRLDNQAHSYRK
Research Area	Microbiology
Source	E.coli
Target Names	lpp
Protein Names	Recommended name: Major outer membrane lipoprotein Alternative name(s): Murein-lipoprotein
Expression Region	21-78aa
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	22.4kDa
Protein Length	Full Length of Mature Protein
Image	



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

Description

Recombinant Erwinia amylovora Major outer membrane lipoprotein (lpp) is produced in E. coli and carries an N-terminal 6xHis-SUMO tag that appears to improve both solubility and purification efficiency. The protein spans the full length of the mature protein (21-78aa) and shows purity levels exceeding 90%, as confirmed by SDS-PAGE analysis. This product is designed for research use only, though it seems to meet high-quality standards for experimental work.

The Major outer membrane lipoprotein (lpp) from Erwinia amylovora likely plays an important structural role in the bacterial outer membrane. It may contribute to membrane integrity and stability, though the exact mechanisms remain an active area of investigation. This protein has become a key component in studies examining bacterial physiology and pathogenicity. It serves as a useful model for understanding membrane protein interactions and the complex mechanisms that underlie bacterial virulence and survival strategies.

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. Bacterial Outer Membrane Protein Structure-Function Studies

This recombinant lipoprotein can be used to investigate the structural characteristics and folding properties of Erwinia amylovora outer membrane lipoproteins in controlled laboratory conditions. The N-terminal 6xHis-SUMO tag makes purification more straightforward and allows for controlled refolding experiments to study the protein's native conformation. Scientists often turn to circular dichroism spectroscopy, dynamic light scattering, and other biophysical methods to characterize the protein's secondary structure and oligomerization state. The mature protein region (21-78aa) represents the functional domain that would normally be exposed on the bacterial surface, though some caution may be needed when interpreting results from the tagged version.

2. Antibody Development and Immunological Research

The purified recombinant protein works well as an antigen for generating polyclonal or monoclonal antibodies specific to Erwinia amylovora major outer membrane lipoprotein. High purity levels (>90%) suggest minimal cross-reactivity with E. coli host proteins during immunization protocols, though researchers should still verify specificity. These antibodies can later be used for bacterial detection assays, immunofluorescence microscopy studies, or Western blot analyses in plant pathology research. The SUMO tag can be cleaved when native epitope presentation becomes necessary for antibody production, though this step may introduce additional variables.

3. Protein-Protein Interaction Studies

The 6xHis-SUMO tagged lipoprotein can be immobilized on nickel-affinity matrices for pull-down assays to identify potential binding partners from Erwinia amylovora cell lysates or plant tissue extracts. This approach may help uncover host-pathogen interaction networks involving outer membrane lipoproteins during bacterial infection processes. The SUMO tag appears to provide additional stability and solubility, which could make complex formation studies more feasible under various buffer conditions. Co-immunoprecipitation experiments can also be performed using anti-His or anti-SUMO antibodies, though the presence of tags might influence binding specificity.

4. Comparative Proteomics and Phylogenetic Analysis

This recombinant protein works as a reference standard for comparative studies of major outer membrane lipoproteins across different bacterial species, particularly within the Erwinia genus. Researchers can perform cross-species binding assays, competitive ELISA experiments, and sequence-structure correlation studies to better understand evolutionary relationships. The standardized expression and purification system allows for relatively consistent protein preparation across multiple research laboratories, though some variation between batches is probably inevitable. Mass spectrometry analysis can be conducted to confirm protein identity and detect any post-translational modifications that might have occurred during expression.

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.