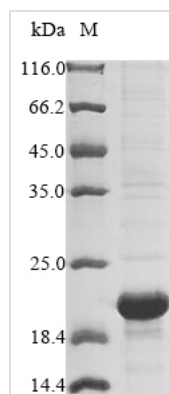




# Recombinant Escherichia coli Prophage outer membrane lipoprotein RzoR (rzoR)

<b>Product Code</b>	CSB-EP349921ENVg1
<b>Abbreviation</b>	Recombinant E.coli rzoR protein
<b>Storage</b>	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.
<b>Uniprot No.</b>	P58042
<b>Storage Buffer</b>	Tris-based buffer,50% glycerol
<b>Product Type</b>	Recombinant Proteins
<b>Immunogen Species</b>	Escherichia coli (strain K12)
<b>Purity</b>	Greater than 85% as determined by SDS-PAGE.
<b>Sequence</b>	CTSKQSVSQCVKPPPPPAWIMQPPPDWQTPLNGIISPSGNDW
<b>Research Area</b>	Others
<b>Source</b>	E.coli
<b>Target Names</b>	rzoR
<b>Expression Region</b>	20-61aa
<b>Notes</b>	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
<b>Tag Info</b>	N-terminal 6xHis-Flag-tagged
<b>Mol. Weight</b>	11.5 kDa
<b>Protein Length</b>	Full Length of Mature Protein

## Image



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

## Description

Recombinant Escherichia coli Prophage outer membrane lipoprotein RzoR is produced using an E. coli expression system and carries an N-terminal 6xHis-



Flag tag. The protein appears to be expressed as the full length mature form, covering amino acid region 20-61. SDS-PAGE analysis shows the product reaches purity levels above 85%, which should provide reliable results for research applications.

RzoR is a prophage outer membrane lipoprotein found in *Escherichia coli*, particularly within the K12 strain. It seems to play a role in how phage particles organize structurally, contributing to both stability and assembly of phage components. Studying RzoR may offer insights into bacterial phage biology - research that could prove valuable for understanding microbial genetics and developing phage therapy approaches.

### 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. Prophage Lysis Mechanism Studies

This recombinant RzoR protein can help investigate the molecular mechanisms behind prophage-mediated bacterial lysis in *E. coli*. As an outer membrane lipoprotein involved in prophage function, RzoR likely contributes to the lysis process that allows phage progeny to escape their host cell. Researchers might use this protein in membrane interaction assays to examine its binding properties and any structural changes that occur during lysis. The N-terminal 6xHis-Flag tag makes purification and detection straightforward in biochemical assays that look at protein-protein or protein-membrane interactions.

#### 2. Antibody Development and Immunological Studies

The dual N-terminal 6xHis-Flag tag system appears to make this recombinant RzoR protein well-suited as an immunogen for creating specific antibodies against native *E. coli* RzoR protein. Researchers could use this purified protein to develop polyclonal or monoclonal antibodies for detecting RzoR expression during prophage induction studies. The high purity level (>85%) should minimize cross-reactivity with other bacterial proteins during antibody production and validation.

#### 3. Protein-Protein Interaction Screening

The Flag tag on this recombinant RzoR protein allows its use in pull-down assays to identify potential interaction partners within prophage lysis machinery or host cell proteins. Researchers can attach Flag-tagged RzoR to anti-Flag resin and incubate with *E. coli* cell lysates to capture interacting proteins for mass spectrometry analysis. This approach may help clarify the protein networks involved in prophage-mediated lysis and potentially identify novel regulatory mechanisms.



#### 4. Structural and Biophysical Characterization

This recombinant RzoR protein could serve as material for structural biology studies, including X-ray crystallography, NMR spectroscopy, or cryo-electron microscopy. The mature protein region (20-61aa) represents what's likely the functional domain and can be analyzed to understand the three-dimensional structure and folding characteristics of this prophage lipoprotein. The 6xHis tag simplifies protein purification for biophysical techniques such as dynamic light scattering, circular dichroism spectroscopy, and thermal stability assays.

#### 5. ELISA-Based Quantitative Assays

The Flag tag makes it possible to develop sandwich ELISA assays for measuring RzoR protein levels in bacterial culture samples during prophage induction experiments. Researchers can use anti-Flag antibodies for both capture and detection to monitor RzoR expression kinetics under different stress conditions or prophage-inducing treatments. This quantitative approach allows systematic studies of prophage gene regulation and the timing of lysis protein production.

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