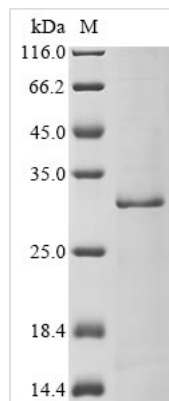




Recombinant Escherichia coli Microcin J25-processing protein mcjB (mcjB)

Product Code	CSB-EP893972ENL
Abbreviation	Recombinant E.coli mcjB 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.	Q9X2V8
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
Purity	Greater than 85% as determined by SDS-PAGE.
Sequence	MIRYCLTSYREDLVILDIINDSFIVPDAGSLLKERDKLLKEFPQLSYFFDSEYHI GSVSRNSDTSFLEERWFLPEPDKTLYKCSLFKRFILLKVFYYSWNIEKKGMA WIFISNKKENRLYSLNEEHLIRKEISNLSIIFHLNIFKSDCLTYSYALKRILNSRNID AHLVIGVRTQPFYSHSWVEVGGQVINDAPNMRDKLSVIAEI
Research Area	Others
Source	E.coli
Target Names	mcjB
Expression Region	1-208aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 10xHis-tagged and C-terminal Myc-tagged
Mol. Weight	32.0 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 Microcin J25-processing protein mcjB is produced using an E. coli expression system and includes the complete protein sequence from residues 1 to 208. The protein features a dual-tag design with an N-terminal 10xHis tag and a C-terminal Myc tag, which makes purification and detection more straightforward. SDS-PAGE analysis indicates the product achieves purity levels above 85%, suggesting it should perform reliably in research settings.

Microcin J25-processing protein mcjB appears to be essential for the maturation and secretion of the antimicrobial peptide Microcin J25 in Escherichia coli. This protein likely plays a key role in post-translational modification processes and may be important for understanding how bacteria defend themselves. Studying this protein could provide insights into bacterial peptide processing pathways and contribute to research on microbial interactions and antibiotic 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. Protein-Protein Interaction Studies Using His-Tag Pull-Down Assays

The N-terminal 10xHis-tag allows researchers to immobilize mcjB on nickel-affinity resins for pull-down experiments that might identify potential binding partners involved in microcin J25 processing or related pathways. Cell lysates or purified protein libraries can be incubated with immobilized mcjB to capture interacting proteins, which are then analyzed by mass spectrometry. This approach could potentially reveal novel components of the microcin J25 biosynthetic machinery or regulatory proteins that modulate mcjB function. The dual-tag system provides an advantage here - the C-terminal Myc-tag can validate interactions through complementary experiments.

2. Antibody Development and Validation Using Dual-Tag System

The recombinant mcjB protein can serve as an immunogen for generating



polyclonal or monoclonal antibodies against the native E. coli mcjB protein. The C-terminal Myc-tag offers a convenient epitope for monitoring protein expression and purification efficiency during antibody production workflows. Researchers can validate generated antibodies using the recombinant protein in Western blot, ELISA, or immunofluorescence assays, with the Myc-tag serving as a positive control. This application may be particularly valuable given that mcjB is quite specialized and existing antibodies are likely limited.

3. Biochemical Characterization and Enzyme Kinetics Analysis

The purified mcjB protein can be used to investigate its biochemical properties, including optimal pH and temperature conditions, cofactor requirements, and substrate specificity related to microcin J25 processing. In vitro assays can be designed to test mcjB activity using synthetic peptide substrates or precursor molecules, with reaction products monitored by HPLC or mass spectrometry. Assessing the protein's stability under various buffer conditions could help establish optimal storage and assay conditions. These studies would likely provide fundamental insights into the molecular mechanism of microcin J25 biosynthesis.

4. Protein Complex Assembly and Stoichiometry Studies

The dual-tagged mcjB can be used to investigate the formation of multi-protein complexes involved in microcin J25 biosynthesis by combining it with other recombinant proteins from the same pathway. The His-tag allows controlled immobilization for studying complex assembly kinetics, while the Myc-tag enables detection and quantification of mcjB within assembled complexes. Size exclusion chromatography, analytical ultracentrifugation, or native PAGE can be employed to characterize complex formation and determine stoichiometric relationships. These experiments might reveal the architectural organization of the microcin J25 processing machinery.

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.