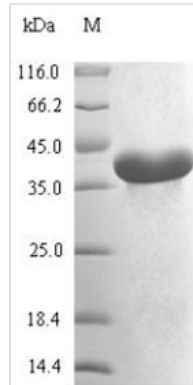




Recombinant Mycoplasma pneumoniae

Methionine aminopeptidase (map)

Product Code	CSB-EP608941MLW
Relevance	Removes the N-terminal methionine from nascent proteins. The N-terminal methionine is often cleaved when the second residue in the primary sequence is small and uncharged (Met-Ala-, Cys, Gly, Pro, Ser, Thr, or Val). Requires deformylation of the N(alpha)-formylated initiator methionine before it can be hydrolyzed.
Abbreviation	Recombinant Mycoplasma pneumoniae map 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.	Q11132
Alias	Short name:MAPUniRule annotation Short name:MetAPUniRule annotation Alternative name(s): Peptidase M
Product Type	Recombinant Protein
Immunogen Species	Mycoplasma pneumoniae (strain ATCC 29342 / M129)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	MVYLKSAREVEQIRQACKIFQEAKAYFTIERLLGKSLTAIDQALKQFIESKGATC AFHKYQNFPGFNCLSLNETVIHGIADNRVFGVKDKLTLDIGINLNGYICDAAFTV LGPKAPEPMQTLLEVTEACFTAVVEPQLRPNNPTGNVSHAIQTYFESKGYLL KQFGGHGCGIKVHEEPLILNYGKPDGTGKLEPGMVLCIEPMVMTDSDAMVMH NNSWNVLTPKSRYNCHVEQMYVITTSGFECLTN
Research Area	Cell Biology
Source	E.coli
Target Names	map
Protein Names	Recommended name: Methionine aminopeptidase Short name= MAP EC= 3.4.11.18 Alternative name(s): Peptidase M
Expression Region	1-248aa
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	43.7kDa
Protein Length	Full Length
Image	



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

Description

Recombinant *Mycoplasma pneumoniae* Methionine aminopeptidase is produced in *E. coli* and features an N-terminal 6xHis-SUMO tag for improved solubility and purification. The full-length protein spans amino acids 1 to 248 and is provided with a purity greater than 90% as determined by SDS-PAGE analysis. This product is intended for research use only and is not suitable for clinical applications.

Methionine aminopeptidase is an enzyme that removes the N-terminal methionine from nascent proteins—a critical step in protein maturation and function. It appears to play a key role in post-translational modification processes within cells. This protein may be significant in understanding protein processing pathways and can likely serve as an important tool in various biochemical and structural biology studies.

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 *Mycoplasma pneumoniae* methionine aminopeptidase offers a way to investigate the fundamental biochemical properties of this bacterial enzyme. Parameters like substrate specificity, optimal reaction conditions, and kinetic measurements can all be examined. The N-terminal 6xHis-SUMO tag makes purification and immobilization straightforward for detailed enzymatic assays.

Researchers might compare how this mycoplasmal enzyme performs against methionine aminopeptidases from other bacterial species—potentially revealing evolutionary differences in catalytic efficiency and substrate preferences. The high purity (>90%) should help ensure reliable and reproducible results in quantitative enzyme activity measurements, though some batch-to-batch variation is always possible.



2. Antibody Development and Immunological Studies

The purified recombinant protein works well as an antigen for generating polyclonal or monoclonal antibodies specific to *Mycoplasma pneumoniae* methionine aminopeptidase. Since the full-length expression region (1-248aa) is present, researchers have access to all potential epitopes found in the native protein.

These antibodies could then be applied in Western blotting, immunofluorescence microscopy, or immunoprecipitation studies to detect and localize the enzyme in bacterial cultures or infected cell systems. The His-SUMO tag also provides a convenient option for tag-specific detection during antibody validation experiments, though some researchers prefer to remove tags before antibody generation to avoid cross-reactivity issues.

3. Protein-Protein Interaction Studies

Pull-down assays and co-immunoprecipitation experiments represent natural applications for this recombinant protein, particularly when hunting for potential binding partners and regulatory proteins that interact with methionine aminopeptidase in *Mycoplasma pneumoniae*. The N-terminal His tag allows for straightforward immobilization on metal affinity matrices, making systematic screening of bacterial lysates or purified protein libraries more manageable.

These interaction studies may reveal important regulatory networks and metabolic pathways involving this enzyme in mycoplasmal biology. The high purity should minimize non-specific binding events that often confound interaction data, though careful controls remain essential.

4. Structural Biology and Biophysical Analysis

This purified recombinant protein provides reasonable starting material for structural characterization techniques—X-ray crystallography, NMR spectroscopy, and cryo-electron microscopy studies all become feasible. The full-length protein (1-248aa) allows investigation of the complete three-dimensional structure and domain organization of the mycoplasmal enzyme.

Dynamic light scattering, analytical ultracentrifugation, and thermal stability assays can help researchers understand protein folding, oligomerization states, and stability parameters. The SUMO tag can be removed by specific proteases if structural studies require the native protein form, though this adds an extra purification step that may reduce overall yield.

5. Drug Discovery and Inhibitor Screening

The recombinant enzyme could serve as a target for high-throughput screening of potential antimicrobial compounds that specifically inhibit *Mycoplasma pneumoniae* methionine aminopeptidase. Having purified protein makes it possible to develop biochemical assays for testing libraries of small molecules or natural products for inhibitory activity.



Researchers can then investigate how identified inhibitors work and determine structure-activity relationships through competitive binding studies. The His-tagged protein makes ELISA-based screening formats more straightforward and allows for easier separation and recovery of the enzyme during inhibitor characterization experiments, though the tag might occasionally interfere with certain compound interactions.

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.