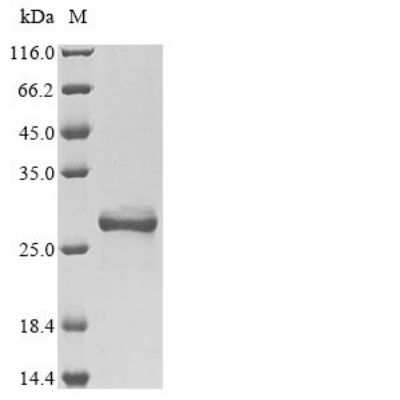
Recombinant Mouse High mobility group protein B1 (Hmgb1), partial

Product Code	CSB-EP010553MO
Abbreviation	Recombinant Mouse Hmgb1 protein, partial
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.	P63158
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	Mus musculus (Mouse)
Purity	Greater than 85% as determined by SDS-PAGE.
Sequence	GKGDPKKPRGKMSSYAFFVQTCREEHKKKHPDASVNFSEFSKKCSERWKTM SAKEKGKFEDMAKADKARYEREMKTYIPPKGETKKKFKDPNAPKRPPSAFFLF CSEYRPKIKGEHPGLSIGDVAKKLGEMWNNTAADDKQPYEKKAAKLKEKYEK DIAAYRAKGKPDAAKKGVVKAEKSKKKKEEEDDEEDEEDEEEEEEEEDEDEE EDDDDE
Research Area	Epigenetics and Nuclear Signaling
Source	E.coli
Target Names	Hmgb1
Expression Region	2-215aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 6xHis-tagged
Mol. Weight	25.7 kDa
Protein Length	Partial
Image	



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

Description

Recombinant Mouse High mobility group protein B1 (Hmgb1) is produced in E. coli and contains the amino acid sequence from 2 to 215. The protein is partially expressed with an N-terminal 6xHis-tag to make purification easier. SDS-PAGE analysis confirms it reaches a purity level of greater than 85%. This product is for research use only and should not be used in clinical applications.

High mobility group protein B1 (Hmgb1) is a non-histone chromosomal protein that appears to play a critical role in DNA architecture and regulation. The protein is involved in various cellular processes, including DNA repair, transcription, and replication. How Hmgb1 interacts with DNA and other nuclear proteins makes it an important subject when studying chromatin dynamics and gene expression.

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-DNA Interaction Studies

This recombinant mouse HMGB1 protein can help investigate DNA-binding properties and chromatin remodeling activities in vitro. The N-terminal His-tag makes purification and immobilization straightforward for surface plasmon resonance or electrophoretic mobility shift assays with various DNA substrates. Scientists can examine binding specificity to different DNA structures, including bent DNA, four-way junctions, and nucleosomal DNA. Since it comes from mouse, it may be particularly suitable for studies comparing protein-DNA interactions across species or for use in mouse-specific experimental systems.

2. Antibody Development and Validation

The purified recombinant protein serves as an antigen for generating mouse HMGB1-specific antibodies or validating existing ones. The His-tag allows easy immobilization on nickel-coated surfaces for ELISA-based antibody screening and characterization. Scientists can use this protein to determine antibody

specificity, cross-reactivity, and binding kinetics. The high purity level should ensure reliable results in immunoassays and reduce background interference in antibody validation experiments.

3. Protein-Protein Interaction Analysis

This HMGB1 protein can be used in pull-down assays to identify and characterize protein binding partners involved in chromatin structure and gene regulation. The His-tag allows efficient immobilization on nickel-affinity matrices to capture interacting proteins from cell lysates or purified protein libraries. Researchers might investigate interactions with histones, transcription factors, and other chromatin-associated proteins. The partial protein construct (amino acids 2-215) retains the major functional domains for most protein interaction studies.

4. Structural and Biophysical Characterization

The recombinant protein provides material for structural studies including X-ray crystallography, NMR spectroscopy, and cryo-electron microscopy experiments. Researchers can analyze the protein's folding, stability, and conformational changes under different buffer conditions or in the presence of DNA substrates. Scientists can use the His-tag for protein immobilization in surface-based biophysical techniques or remove it if needed for structural studies. The E. coli expression system typically yields protein suitable for most structural biology applications.

5. In Vitro Functional Assays

This HMGB1 protein can help reconstitute chromatin remodeling activities and study transcriptional regulation mechanisms in defined in vitro systems. Researchers can examine the protein's effects on nucleosome positioning, DNA bending, and transcription factor accessibility using purified components. The recombinant protein allows dose-response studies and mechanistic investigations of HMGB1 function in chromatin dynamics. The mouse sequence specificity likely makes it appropriate for studies using mouse-derived chromatin templates or transcription 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.