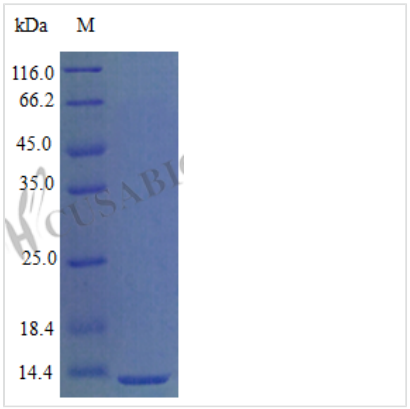
Recombinant Mouse C-X-C motif chemokine 9 protein (Cxcl9), partial (Active)

Product Code	CSB-AP001131MO
Abbreviation	Recombinant Mouse Cxcl9 protein, partial (Active)
Uniprot No.	P18340
Form	Lyophilized powder
Storage Buffer	Lyophilized from a 0.2 μm filtered PBS, pH 7.4
Product Type	Chemokine
Immunogen Species	Mus musculus (Mouse)
Biological Activity	Fully biologically active when compared to standard. The biological activity determined by a chemotaxis bioassay using human lymphocytes is in a concentration range of 0.1-1.0 ng/ml.
Purity	>95% as determined by SDS-PAGE.
Sequence	TLVIRNARCS CISTSRGTIH YKSLKDLKQF APSPNCNKTE IIATLKNGDQ TCLDPDSANV KKLMKEWEKK INQKKKQKRG KKHQKNMKNR KPKTPQSRRR SRKTT
Research Area	Immunology
Source	E.coli
Target Names	Cxcl9
Expression Region	22-126
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	Tag-Free
Mol. Weight	12.2 kDa
Protein Length	Partial of M34815
PubMed ID	2115167; 16141072; 19468303; 15489334
Image	

Description

Recombinant Mouse C-X-C motif chemokine 9 protein (Cxcl9) is produced in E. coli and covers amino acid sequence 22-126 of the protein. This tag-free product achieves purity greater than 95% as determined by SDS-PAGE, with endotoxin levels below 1.0 EU/μg, verified by the LAL method. The protein appears to be fully biologically active, demonstrated by its ability to induce chemotaxis of human lymphocytes at concentrations ranging from 0.1 to 1.0 ng/ml.

Also known as MIG (monokine induced by gamma interferon), Cxcl9 is a chemokine that participates in immunological responses, particularly lymphocyte recruitment. The protein plays a significant role in inflammation and immune surveillance by guiding immune cells to sites of infection or injury. Because of its important role in immune signaling pathways, Cxcl9 represents a crucial protein for research into immune responses and inflammatory processes.

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. Lymphocyte Chemotaxis Assays

This recombinant mouse Cxcl9 protein can serve as a positive control or standard in chemotaxis bioassays when studying lymphocyte migration patterns. Given its demonstrated biological activity in human lymphocyte chemotaxis assays at concentrations of 0.1-1.0 ng/ml, researchers may be able to establish dose-response curves and validate experimental conditions. The protein's high purity (>95%) and low endotoxin levels make it suitable for cell-based assays where contamination could interfere with migration responses. This application appears particularly valuable for investigating immune cell trafficking mechanisms in preclinical research models.

2. Comparative Species Cross-Reactivity Studies

The demonstrated cross-species activity of this mouse Cxcl9 protein on human lymphocytes creates an opportunity to investigate chemokine receptor binding specificity and evolutionary conservation. Researchers can compare chemotactic responses of lymphocytes from different species to determine the extent of functional conservation across mammalian Cxcl9 orthologs. This application supports fundamental research into chemokine-receptor interactions and can inform the design of translational studies between mouse models and human systems.

3. Antibody Development and Validation

This biologically active recombinant protein serves as an ideal antigen for

generating mouse Cxcl9-specific antibodies or validating existing antibody preparations. The tag-free nature ensures that antibodies will recognize the native protein sequence without interference from artificial epitopes. Researchers can use this protein in ELISA development, Western blot validation, and immunoassay standardization. The confirmed biological activity provides an additional functional readout to complement immunological detection methods.

4. Protein-Protein Interaction Studies

The recombinant Cxcl9 protein can be applied in biochemical assays to identify and characterize binding partners, particularly chemokine receptors such as CXCR3. Surface plasmon resonance, bio-layer interferometry, or pull-down assays may use this protein to determine binding kinetics and affinities. High purity and biological activity should ensure reliable results in binding studies, while the low endotoxin content prevents interference in sensitive biochemical assays.

5. Structure-Function Relationship Analysis

This biologically active protein provides a reference standard for mutagenesis studies aimed at understanding critical residues for Cxcl9 function. Researchers can compare the chemotactic activity of protein variants against this wild-type recombinant protein using the established lymphocyte migration assay. The defined expression region (22-126) and confirmed activity enable systematic investigation of how specific amino acid modifications affect biological function, supporting protein engineering and mechanistic studies.

Endotoxin	Less than 1.0 EU/μg as determined by LAL method.
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.