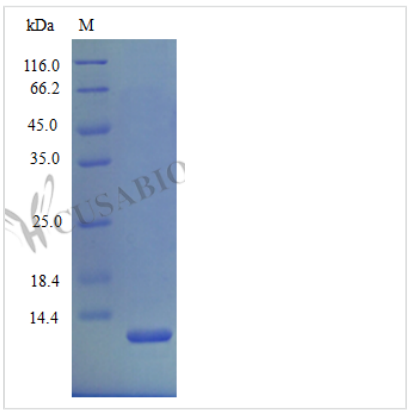
Recombinant Mouse C-X-C motif chemokine 2 protein (Cxcl2) (Active)

Product Code	CSB-AP001071MO
Abbreviation	Recombinant Mouse Cxcl2 protein (Active)
Uniprot No.	P10889
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 neutrophils is in a concentration range of 1.0-10 ng/ml.
Purity	>97% as determined by SDS-PAGE.
Sequence	AVVASELRCQ CLKTLPRVDF KNIQSLSVTP PGPHCAQTEV IATLKGGQKVCLDPEAPLVQ KIIQKILNKG KAN
Research Area	Immunology
Source	E.coli
Target Names	Cxcl2
Expression Region	28-100aa
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	7.8 kDa
Protein Length	Full Length of Mature Protein
PubMed ID	2201751; 2643119; 9622482

Image



Description

Recombinant Mouse C-X-C motif chemokine 2 protein (Cxcl2) is produced in E. coli and covers the full length of the mature protein from amino acids 28-100. This tag-free protein achieves a purity level of over 97% as determined by SDS-PAGE. The protein appears to maintain full biological activity, as established through a chemotaxis bioassay using human neutrophils, with effective concentrations ranging from 1.0-10 ng/ml. Endotoxin levels remain below 1.0 EU/μg, verified by the LAL method.

C-X-C motif chemokine 2 (Cxcl2) is a chemokine that likely plays a key role in neutrophil chemotaxis and immune response. As part of the CXC chemokine family, it may be crucial for recruiting immune cells to inflammation or injury sites. Researchers often examine Cxcl2 for its role in inflammatory processes and its potential relevance across various fields, including immunology and cell signaling pathways.

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. Neutrophil Chemotaxis Assays

This recombinant mouse Cxcl2 protein works well as a positive control or test reagent in neutrophil migration studies using transwell or microfluidic chemotaxis chambers. Since it shows biological activity in human neutrophil chemotaxis assays at 1.0-10 ng/ml concentrations, researchers can establish dose-response curves and compare chemotactic responses across different experimental conditions. The high purity (>97%) and low endotoxin levels suggest it's suitable for primary cell-based assays where contamination might interfere with results. This approach proves particularly valuable for studying neutrophil recruitment mechanisms and inflammatory responses under controlled laboratory conditions.

2. Inflammatory Response Modeling in Cell Culture

The biologically active Cxcl2 protein can act as an inflammatory stimulus in various cell culture models to study chemokine signaling pathways and cellular responses. Researchers might use this protein to activate chemokine receptors on target cells and investigate downstream signaling cascades, gene expression changes, or protein modifications. The defined concentration range of biological activity (1.0-10 ng/ml) offers a starting point for dose optimization in different cell types. This application appears to support mechanistic studies of inflammation and immune cell activation in vitro.

3. Antibody Development and Validation

This recombinant Cxcl2 protein serves as an antigen for developing and

characterizing anti-Cxcl2 antibodies for research applications. Its high purity and tag-free nature make it suitable for immunization protocols, ELISA development, and antibody specificity testing. Researchers can use this protein to validate antibody performance in various assays including Western blotting, immunoprecipitation, and flow cytometry applications. Having biologically active protein also enables functional antibody screening to identify neutralizing or non-neutralizing antibodies.

4. Protein-Protein Interaction Studies

The recombinant Cxcl2 protein works in biochemical assays to study its interactions with chemokine receptors or other binding partners. Surface plasmon resonance, bio-layer interferometry, or other label-free binding assays can use this protein to determine binding kinetics and affinities. The high purity and biological activity suggest that interaction studies may reflect physiologically relevant binding events. This application supports research into chemokine receptor pharmacology and the molecular basis of chemokine signaling.

5. Comparative Species Studies

This mouse Cxcl2 protein enables comparative studies with human or other species' chemokine orthologs to understand evolutionary conservation and species-specific differences in chemokine function. Researchers can compare the biological activity, receptor binding profiles, and functional responses between mouse and human systems using this well-characterized protein. The demonstrated cross-species activity with human neutrophils provides a foundation for such comparative analyses. This application appears valuable for translational research and understanding species differences in inflammatory responses.

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.