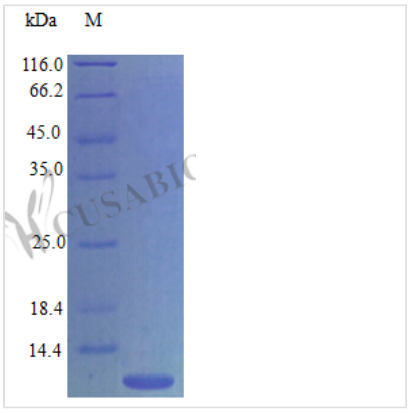
Recombinant Mouse C-C motif chemokine 4 protein (Ccl4) (Active)

Product Code	CSB-AP001231MO
Abbreviation	Recombinant Mouse Ccl4 protein (Active)
Uniprot No.	P14097
Form	Lyophilized powder
Storage Buffer	Lyophilized from a 0.2 μm filtered 2X 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 monocytes is in a concentration range of 20-100 ng/ml.
Purity	>97% as determined by SDS-PAGE.
Sequence	APMGSDPPTS CCFSYTSRQL HRSFVMDYYE TSSLCSKPAV VFLTKRGRQI CANPSEPWVT EYMSDLELN
Research Area	Immunology
Source	E.coli
Target Names	Ccl4
Expression Region	24-92aa
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	3058856; 2521353; 10438970

Image



Description

Recombinant Mouse C-C motif chemokine 4 protein (Ccl4) is expressed in E. coli and represents the full length of the mature protein, spanning amino acids 24-92. This tag-free protein shows high purity of over 97%, as verified by SDS-PAGE. It appears to maintain biological activity, demonstrated through a chemotaxis bioassay using human monocytes, with an effective concentration ranging from 20-100 ng/ml. The endotoxin level stays controlled at less than 1.0 EU/μg, determined by the LAL method.

C-C motif chemokine 4 (Ccl4) is a chemokine involved in immune responses, specifically in the recruitment and migration of monocytes, T lymphocytes, and natural killer cells. It likely plays a significant role in inflammatory pathways and represents an important molecule for studying immune system functions and mechanisms. Research focusing on chemotaxis and immune cell signaling frequently makes use of this protein.

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. Chemotaxis Assay Development and Optimization

This recombinant mouse Ccl4 protein can work as a positive control and reference standard in chemotaxis assays for studying monocyte and macrophage migration. The confirmed biological activity in the 20-100 ng/ml range using human monocytes provides a validated concentration window for experimental design. Researchers can apply this protein to establish baseline chemotactic responses and compare the activity of other chemokines or test compounds. High purity (>97%) and low endotoxin levels make it suitable for sensitive cell-based migration assays.

2. Antibody Development and Validation

The tag-free, highly pure recombinant Ccl4 protein serves as what appears to be an ideal immunogen and validation tool for developing mouse Ccl4-specific antibodies. Researchers can apply this protein for immunizing animals to generate polyclonal or monoclonal antibodies against mouse Ccl4. The protein may also function as a positive control in immunoassays such as ELISA, Western blotting, and immunoprecipitation experiments to validate antibody specificity and determine optimal working concentrations.

3. Receptor Binding Studies

This biologically active Ccl4 protein can be applied in receptor binding assays to study interactions with CCR5 and other relevant chemokine receptors. Researchers can perform competitive binding experiments, saturation binding studies, and receptor internalization assays using this protein as a ligand. The

confirmed biological activity suggests that the protein maintains proper folding and receptor recognition capabilities necessary for meaningful binding studies.

4. Inflammatory Response Research Models

The recombinant mouse Ccl4 protein can be used in in vitro studies investigating inflammatory signaling pathways and immune cell activation. Researchers can apply this protein to stimulate mouse immune cells in culture to study downstream signaling cascades, gene expression changes, and cytokine production profiles. The species-matched origin (mouse) makes it particularly relevant for studies using mouse-derived cell lines or primary cells from mouse models.

5. Protein-Protein Interaction Studies

This purified Ccl4 protein may serve as a bait or target molecule in biochemical assays designed to identify and characterize protein-protein interactions. Researchers can apply techniques such as surface plasmon resonance, bio-layer interferometry, or pull-down assays to study Ccl4 interactions with other proteins, including receptors, binding partners, or regulatory molecules. The high purity and tag-free nature of the protein appears to minimize potential artifacts in interaction 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.