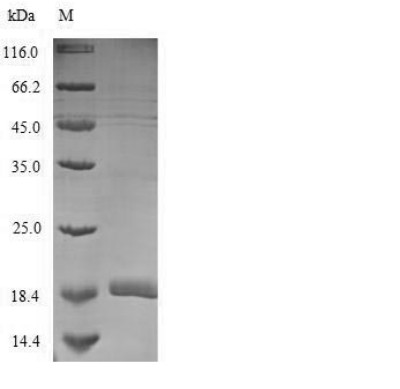
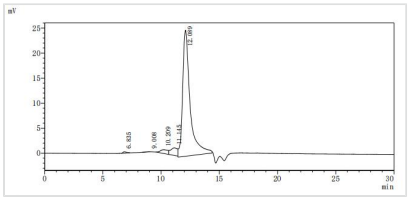
Recombinant Mouse Complement receptor type 2 (Cr2), partial

Product Code	CSB-MP005934MO2
Relevance	Receptor for complement C3d. Participates in B lymphocytes activation.
Abbreviation	Recombinant Mouse Cr2 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.	P19070
Product Type	Recombinant Proteins
Immunogen Species	Mus musculus (Mouse)
Purity	Greater than 90% as determined by SDS-PAGE. Greater than 90% as determined by SEC-HPLC.
Sequence	ISCDPPPEVKNARKPYYSLPIVPGTVLRYTCSPSYRLIGEKAIFCISENQVHATWDKAPPICESVNKTISCSDPIVPGGFMNKGSKAPFRHGDSVTFTCKANFTMKGSKTVWCQANEMWGPTALPVCESDFPLE
Research Area	Immunology
Source	Mammalian cell
Target Names	Cr2
Expression Region	12-145aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 6xHis-Myc-tagged
Mol. Weight	18.7kDa
Protein Length	Partial
Image	



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



The purity of Cr2 was greater than 90% as determined by SEC-HPLC

Description

Recombinant Mouse Complement receptor type 2 (Cr2) is produced in a mammalian cell expression system, which appears to ensure proper folding and post-translational modifications. This partial protein spans amino acids 12 to 145 and comes with an N-terminal 6xHis and Myc tag for easier purification and detection. SDS-PAGE verification shows the protein achieves greater than 90% purity, making it suitable for various research applications.

Complement receptor type 2 (CR2) represents an important component of the immune system. It's primarily involved in regulating B cell activation and response, though its full role may be more complex than initially understood. The receptor binds complement component C3d and likely plays a part in immune complex clearance. CR2 appears critical for adaptive immunity, and studying it could provide valuable insights into how immune function and regulation actually work.

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. Complement Receptor Binding Studies

This recombinant mouse Cr2 fragment (12-145aa) works well in in vitro binding assays for investigating interactions with complement components—especially C3d and iC3b fragments. The N-terminal His-Myc tag makes detection and purification straightforward for surface plasmon resonance, ELISA-based binding assays, or pull-down experiments. Scientists can examine binding kinetics and specificity of this Cr2 domain with different complement fragments. This may help clarify complement receptor function at the molecular level, though some aspects might remain elusive.

2. Antibody Development and Validation

The high purity (>90%) recombinant Cr2 protein works as an antigen for generating mouse Cr2-specific antibodies in research settings. Its His-Myc tag allows for simple purification and immobilization on different surfaces during immunization protocols or antibody screening assays. Scientists can validate generated antibodies using this recombinant protein in Western blot, ELISA, or immunoprecipitation experiments to confirm specificity and binding affinity—though cross-reactivity issues may still arise.

3. Protein-Protein Interaction Mapping

The tagged recombinant Cr2 fragment can help identify novel protein interaction partners from mouse cell lysates or tissue extracts through pull-down assays. While the His tag allows metal affinity purification, the Myc tag provides an additional detection method for confirming protein presence and integrity throughout experiments. This approach might reveal previously unknown molecular pathways involving complement receptor signaling, although some interactions could be missed depending on experimental conditions.

4. Structural and Biochemical Characterization

This mammalian-expressed Cr2 fragment allows for detailed biochemical analysis including circular dichroism spectroscopy, dynamic light scattering, and analytical ultracentrifugation to study protein folding and stability. The mammalian expression system likely ensures proper post-translational modifications that may be critical for native protein structure. Scientists can investigate the biophysical properties of this specific Cr2 domain and compare them with full-length receptor studies, though some structural features might differ from the native context.

5. Competitive Inhibition Assays

The recombinant Cr2 protein serves as a competitor in cell-based assays studying complement receptor-mediated processes in mouse immune cells. Adding increasing concentrations of this soluble Cr2 fragment to cell culture systems lets researchers investigate how Cr2-ligand interactions affect B cell activation, immune complex processing, or complement-mediated cellular responses. The defined concentration and purity of this recombinant protein enables quantitative analysis of competitive binding effects, though results may vary depending on the specific cell system used.

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.