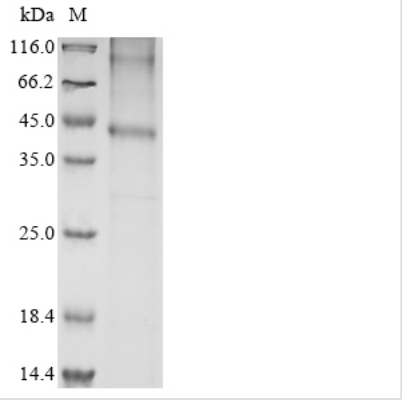
Recombinant Mouse C-C chemokine receptor type 1 (Ccr1)

Product Code	CSB-CF004839MO
Abbreviation	Recombinant Mouse Ccr1 protein
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.	P51675
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	MEISDFTEAYPTTTEFDYGDSTPCQKTAVRAFGAGLLPPLYSLVFIIGVVGNVLV ILVLMQHRRLQSMTSIYLFNLAVSDLVFLFTLPFWIDYKLKDDWIFGDAMCKLLS GFYYLGLYSEIFFIILLTIDRYLAIVHAVFALRARTVTFGIITSIITWALAILASMPAL YFFKAQWEFTHRTCSPHFPYKSLKQWKRFQALKLNLLGLILPLLVMIICYAGIIRI LLRRPSEKKVKAVRLIFAITLLFFLLWTPYNLSVFVSAFQDVLFTNQCEQSKQLD LAMQVTEVIAYTHCCVNPIIYVFVGERFWKYLRQLFQRHVAIPLAKWLPFLSVD QLERTSSISPSTGEHELSAGF
Research Area	Immunology
Source	in vitro E.coli expression system
Target Names	Ccr1
Expression Region	1-355aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 10xHis-tagged
Mol. Weight	43.7 kDa
Protein Length	Full Length
Image	



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

Description

The mouse Ccr1 protein-encoding gene (1-355aa) is linked to an N-terminal 10xHis tag gene to create the target gene. This target gene is amplified by PCR and then cloned into expression vectors, constructing recombinant plasmids. Following the transfection of plasmids into an in vitro E.coli expression system, target proteins are induced to express during culture. The supernatant from the culture is purified by affinity chromatography, harvesting the recombinant mouse Ccr1 protein with purity exceeding 85%, as validated by SDS-PAGE.

The CCR1 is a G protein-coupled receptor that plays a significant role in various physiological and pathological processes, particularly in immune responses and inflammation. CCR1 is primarily activated by its ligands, such as CCL3, CCL5, and CCL9, which are crucial for mediating chemotaxis and the recruitment of immune cells, including monocytes, neutrophils, and T cells, to sites of inflammation [1][2][3].

In the context of neuroinflammation, CCR1 is expressed in various cell types, including microglia and astrocytes, and is implicated in the disruption of the blood-brain barrier (BBB) during neuroinflammatory diseases [1][4]. Activation of CCR1 in the central nervous system (CNS) can lead to increased neuroinflammation, which is associated with conditions such as cerebral hemorrhage and multiple sclerosis [1][4]. Studies have demonstrated that CCR1 activation promotes neuroinflammation through specific signaling pathways, such as the ERK1/2 pathway, highlighting its role in the pathogenesis of neuroinflammatory disorders [4].

Moreover, CCR1 is involved in the regulation of inflammatory responses in other tissues, including the lungs and cardiovascular system. In asthma, CCR1 expression on airway smooth muscle cells has been linked to the modulation of immune responses and inflammation [5]. Similarly, in acute myocardial infarction, CCR1 signaling pathways are activated, contributing to the inflammatory process that exacerbates tissue damage [2].

References:
[1] J. Yan, W. Xu, C. Lenahan, L. Huang, U. Ocak, J. Wen, et al., Met-rantes preserves the blood–brain barrier through inhibiting ccr1/src/rac1 pathway after intracerebral hemorrhage in mice, Fluids and Barriers of the CNS, vol. 19, no. 1, 2022. https://doi.org/10.1186/s12987-022-00305-3
[2] D. Chen, X. Kong, X. Shen, M. Huang, J. Zheng, J. Sun, et al., Identification

of differentially expressed genes and signaling pathways in acute myocardial infarction based on integrated bioinformatics analysis, Cardiovascular Therapeutics, vol. 2019, p. 1-13, 2019. https://doi.org/10.1155/2019/8490707
[3] Y. Sang, Y. Li, L. Xu, J. Chen, D. Li, & M. Du, Dysfunction of ccr1+ decidual macrophages is a potential risk factor in the occurrence of unexplained recurrent pregnancy loss, Frontiers in Immunology, vol. 13, 2022. https://doi.org/10.3389/fimmu.2022.1045532
[4] J. Yan, G. Zuo, P. Sherchan, L. Huang, U. Ocak, W. Xu, et al., Ccr1 activation promotes neuroinflammation through ccr1/tpr1/erk1/2 signaling pathway after intracerebral hemorrhage in mice, Neurotherapeutics, vol. 17, no. 3, p. 1170-1183, 2020. https://doi.org/10.1007/s13311-019-00821-5
[5] P. Joubert, S. Lajoie-Kadoch, M. Welman, S. Dragon, S. Létuvée, B. Tolloczko, et al., Expression and regulation of ccr1 by airway smooth muscle cells in asthma, The Journal of Immunology, vol. 180, no. 2, p. 1268-1275, 2008. https://doi.org/10.4049/jimmunol.180.2.1268

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.
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