Sterile

#12838

Mouse MCP-1

☐ SC 10 µg (With Carrier)
☐ SF 10 µg (Carrier Free)
☐ LC 50 µg (With Carrier)
☐ LF 50 µg (Carrier Free)

Multi-milligram quantities available

New 09/13

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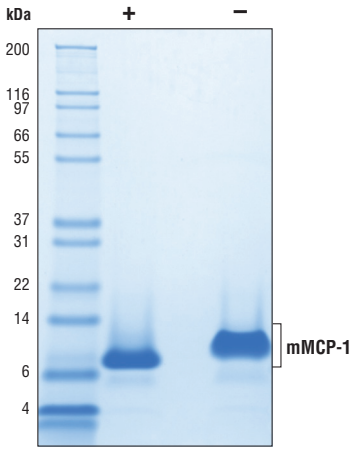
Source: Recombinant Mouse MCP-1 (mMCP-1) Gln24-Arg96 (Accession #NP_035463) was expressed in *E.coli* at Cell Signaling Technology.

Molecular Characterization: Recombinant mMCP-1 has a calculated MW of 8,530. DTT-reduced protein migrates as a 8 kDa polypeptide. The nonreduced protein migrates at 12 kDa. The expected amino terminus of recombinant mMCP-1 was verified by amino acid sequencing.

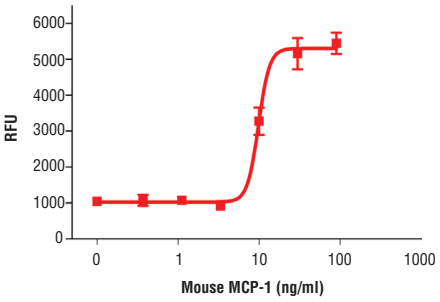
Endotoxin: Less than 0.01 ng endotoxin/1 µg mMCP-1.

Purity: >93% as determined by SDS-PAGE of 6 µg reduced (+) and nonreduced (-) recombinant mMCP-1. All lots are greater than 93% pure.



The purity of recombinant mMCP-1 was determined by SDS-PAGE of 6 µg reduced (+) and nonreduced (-) recombinant mMCP-1 and staining overnight with Coomassie Blue.

Bioactivity: The activity of mMCP-1 was determined using a THP-1 cell migration assay. The ED_{50} of each lot is between 1-11 ng/ml.



mMCP-1-induced migration of THP-1 cells was assessed. THP-1 cells were incubated in a 96-well transwell plate with increasing concentrations of mMCP-1 in the bottom chamber. After 2 hr, the number of THP-1 cells that migrated to the bottom chamber of the transwell was quantified by measuring DNA content using a fluorescent dye.

Formulation: With carrier: Lyophilized from a 0.22 µm filtered solution of mMCP-1 in 20 mM Tris, pH 7.2 containing 20 µg BSA per 1 µg mMCP-1.

Carrier free: Lyophilized from a 0.22 µm filtered solution of mMCP-1 in 20 mM Tris, pH 7.2.

Reconstitution:
With carrier: Add sterile 20 mM Tris, pH 7.2 or 20 mM Tris, pH 7.2 containing 1% bovine or human serum albumin or 5-10% FBS to a final mMCP-1 concentration of greater than 50 µg/ml. Solubilize for 30 minutes at room temperature with occasional gentle vortexing.

Carrier free: Add sterile 20 mM Tris, pH 7.2 or 20 mM Tris, pH 7.2 containing protein to minimize absorption of mMCP-1 to surfaces. Solubilize for 30 minutes at room temperature with occasional gentle vortexing. Stock mMCP-1 should be greater than 50 µg/ml.

Storage: Stable in lyophilized state at 4°C for 1 year after receipt. Sterile stock solutions reconstituted with carrier protein are stable at 4°C for 2 months and at -20°C for 6 months. Avoid repeated freeze-thaw cycles.

Maintain sterility. Storage at -20°C should be in a manual defrost freezer.

Applications: Optimal concentration for the desired application should be determined by the user.

Background: MCP-1 (CCL2) is the first member of the C-C family of chemokines to be identified (1). C-C chemokines are characterized by two adjacent cysteine residues within the polypeptide, which form an intra-molecular disulfide bond. MCP-1 is a potent chemotactic factor for monocytes/macrophages, T cells and a subset of NK cells (1-4). The MCP-1 receptor, CCR2, is expressed as two splice isoforms, CCR2A and CCR2B, of which CCR2B is the predominant form (1). MCP-1 is secreted by adipocytes and appears to be one of many links between obesity, inflammation, and diabetes (1). MCP-1/CCR2 signaling appears to play a key role in γδ effector T cells recruitment and anti-tumor responses in a murine B16 melanoma model (2). Conversely, CCL2 expression is upregulated in many types of cancer and has been implicated in promoting tumor cell survival, proliferation, and tumor associated inflammation (4).

Background References:

(1) Panee, J. (2012) *Cytokine* 60, 1-12.

(2) Lança, T. et al. (2013) *J Immunol* 190, 6673-80.

(3) van Helden, M.J. et al. (2012) *PLoS One* 7, e52027.

(4) Zhang, J. et al. (2010) *Cytokine Growth Factor Rev* 21, 41-8.