Cytokines

Human Recombinant MCP-1 (CCL2)

Monocyte chemotactic protein 1

Catalog #	78087	5 µg
	78087.1	20 µg

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Product Description

Monocyte chemotactic protein-1 (MCP-1), also known as CCL2, is a member of the CC family of chemokines. The protein is primarily induced by platelet-derived growth factor (PDGF) gene (Cochran et al.). The biological effects of MCP-1 are mediated via the specific G-protein-coupled receptor CCR2, which in turn activates signal transduction pathways leading to monocyte transmigration (Sozzani et al.). Migration of monocytes from the bloodstream across the vascular endothelium is required for routine immunological surveillance of tissues, as well as other immunomodulatory effects. MCP-1 is produced by a variety of cell types, including fibroblasts and endothelial, epithelial, smooth muscle, mesangial, astrocytic, monocytic, and microglial cells, which are important for antiviral responses in the peripheral circulations and in tissues (Cushing et al.; Deshmane et al.). MCP-1 plays a role in physiological processes such as neurogenesis, neuroprotection, and neurotransmission and has important implications in neurological disorders such as multiple sclerosis and Alzheimer's disease, in which it is produced during neuroinflammation at the sites of lesions (Conductier et al.).

Product Information

Alternative Names:	DIA, Differentiation-inducing factor, HILDA, Human interleukin in DA cells, Leukemia inhibitory factor, MCAF, Melanoma-derived LPL inhibitor, MLPLI, Monocyte chemoattractant protein 1
Accession Number:	P13500
Amino Acid Sequence:	QPDAINAPVT CCYNFTNRKI SVQRLASYRR ITSSKCPKEA VIFKTIVAKE ICADPKQKWV QDSMDHLDKQ TQTPKT
Predicted Molecular Mass:	8.7 kDa
Species:	Human
Cross Reactivity:	Mouse
Formulation:	Lyophilized from a sterile-filtered aqueous solution containing 0.1% trifluoroacetic acid.
Source:	E. coli

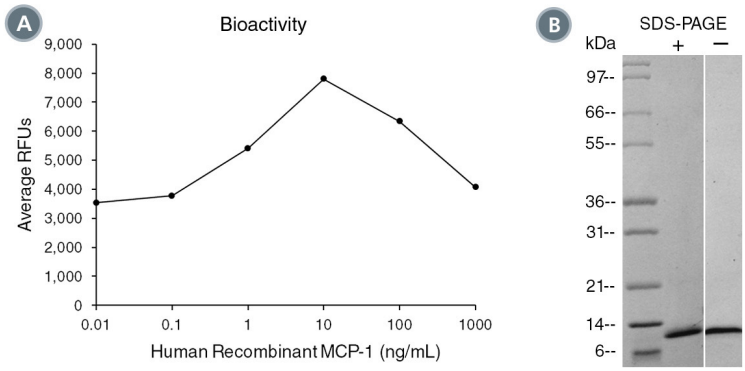
Specifications

Activity:	Biological activity was detectable at ≤ 100 ng/mL as determined by a cell migration assay of THP-1 cells.
Purity:	≥ 95%
Endotoxin Level:	Measured by kinetic Limulus amebocyte lysate (LAL) analysis and is ≤ 1 EU/µg protein.

Preparation and Storage

Storage:	Store at -20°C to -80°C.
Stability:	Stable as supplied for 12 months from date of receipt.
Preparation:	Centrifuge vial before opening. Reconstitute the product in sterile water to at least 0.1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex. OPTIONAL: After reconstitution, if product will not be used immediately, dilute with concentrated bovine serum albumin (BSA) to a final BSA concentration of 0.1%. The effect of storage of stock solution on product performance should be tested for each application. As a general guide, do not store at 2 - 8°C for more than 1 month or at -80°C for more than 3 months. Avoid repeated freeze-thaw cycles.

Data



(A) The biological activity of Human Recombinant MCP-1 (CCL2) was tested by its ability to induce chemotaxis of THP-1 cells. Cell migration was measured after 1 hour using a fluorometric assay method. Increase in migration over basal level was seen starting at 1 ng/mL.
(B) 1 µg of Human Recombinant MCP-1 (CCL2) was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining. Human Recombinant MCP-1 (CCL2) has a predicted molecular mass of 8.7 kDa.

Related Products

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References

Cochran BH et al. (1983) Molecular cloning of gene sequences regulated by platelet-derived growth factor. Cell 33(3): 939–47.
Conductier G et al. (2010) The role of monocyte chemoattractant protein MCP1/CCL2 in neuroinflammatory diseases. J Neuroimmunol 224(1-2): 93–100.
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Deshmane SL et al. (2009) Monocyte chemoattractant protein-1 (MCP-1): an overview. J Interferon Cytokine Res 29(6): 313–26.
Sozzani S et al. (1994) Receptors and transduction pathways for monocyte chemotactic protein-2 and monocyte chemotactic protein-3. Similarities and differences with MCP-1. J Immunol 152(7): 3615–22.