

Recombinant Human CCL2 (MCP-1) (Animal-Free)

Catalog# / Size	716504 / 20 µg
Regulatory Status	RUO
Other Names	Leukemia inhibitory factor, HILDA (human interleukin in DA cells), MLPLI (melanoma-derived LPL inhibitor), DIA (differentiation-inducing factor), MCP1
Description	CCL2, also known as MCP-1, is a member of the CC β chemokine family. It is widely expressed in endothelial cells, smooth muscle cells, and monocytes in response to several atherogenic stimulants such as CD40 ligand, platelet derived growth factor (PDGF), interleukin-1β (IL-1β) and oxidized low density lipoprotein. Several recent <i>in vivo</i> studies have disclosed critical roles of MCP-1 in atherosclerosis. In addition, MCP-1 has been implicated in monocytic infiltration of tissues during several inflammatory diseases and has been implicated in macrophage-mediated tumor growth suppression in mice. CCL2 has been shown to have direct effects on tumor cells in an autocrine and paracrine fashion in multiple cancer types, including breast, lung, cervix, ovary, sarcoma, and prostate. In addition, MCP-1 plays a key role in the regulation of MMPs during transmigration. MCP-1 has been described as a new diagnostic marker and therapeutic target for progressive renal injury in diabetic nephropathy. Kidney epithelial cells, including glomerular podocytes and tubular cells make MCP-1 in response to high glucose and advanced glycation end products. MCP-1 promotes inflammation and progressive injury in diabetic kidneys. The importance of MCP-1 in the early development of diabetic nephropathy has been determined in animal models incorporating genetically deficient mice or therapeutic blockade of MCP-1 receptor (CCR2).

Product Details

Source	Human CCL2, amino acids Gln24-Thr99 (NM_002982), was expressed in <i>E.coli</i> .
Molecular Mass	The 76 amino acid recombinant protein has a predicted molecular mass of 8.7 kD. The predicted N-terminal amino acid is Gln.
Purity	>98%, as determined by Coomassie stained SDS-PAGE and HPLC analysis.
Formulation	Lyophilized, carrier-free.
Endotoxin Level	Less than 0.1 ng per µg of protein.
Storage & Handling	Unopened vial can be stored at -20°C or -70°C. For maximum results, quick spin vial prior to opening. Reconstitute in water to a concentration of 0.1-1.0 mg/ml. Do not vortex. It is recommended to further dilute in a buffer, such as 5% Trehalose, and store working aliquots at -20°C to -80°C. Avoid repeated freeze/thaw cycles.
Activity	Determined by its ability to chemoattract human monocytes using a concentration range of 10 - 100 ng/ml.
Application	Bioassay
Application Notes	This product is reactive with human, bacteria, chicken, monkey, mouse, and rat.

Antigen Details

Structure	Chemokine
Distribution	CCL2 (MCP-1) is secreted by fibroblast, endothelial cells, smooth muscle cells, tumor cells, phytohemagglutinin stimulated mononuclear cells.
Function	Monocyte chemotactic and activating factor (MCAF), monocyte secretory protein JE, small inducible cytokine A2 (SCYA2).
Ligand/Receptor	CCL2 mediates its cellular effects primarily through CCR2 receptor.
Cell Type	Hematopoietic stem and progenitors

Biology Area	Cell Biology, Neuroinflammation, Neuroscience, Stem Cells
Molecular Family	Cytokines/Chemokines
Antigen References	<ol style="list-style-type: none">1. Loberg RD, <i>et al.</i> 2007. <i>Cancer Research</i>. 67:9417.2. Gregory JL, <i>et al.</i> 2006. <i>J. Immunol.</i> 177:8072.3. Qui Z, <i>et al.</i> 2009. <i>Immunology</i>. 214:835.4. Reichel CA, <i>et al.</i> 2009. <i>Arterioscler. Thromb. Vasc. Biol.</i> ATVB AHA.109.193268v15. McQuibban GA, <i>et al.</i> 2002. <i>Blood</i> 100:1160.5. Tesh GH, <i>et al.</i> 2008. <i>Am. J. Physiol. Renal. Physiol.</i> 294:F697-F701.
Gene ID	6347

For research use only. Not for diagnostic use. Not for resale. BioLegend will not be held responsible for patent infringement or other violations that may occur with the use of our products.

*These products may be covered by one or more Limited Use Label Licenses (see the BioLegend Catalog or our website, www.biolegend.com/ordering#license). BioLegend products may not be transferred to third parties, resold, modified for resale, or used to manufacture commercial products, reverse engineer functionally similar materials, or to provide a service to third parties without written approval of BioLegend. By use of these products you accept the terms and conditions of all applicable Limited Use Label Licenses. Unless otherwise indicated, these products are for research use only and are not intended for human or animal diagnostic, therapeutic or commercial use.

BioLegend Inc., 8999 BioLegend Way, San Diego, CA 92121 www.biolegend.com
Toll-Free Phone: 1-877-Bio-Legend (246-5343) Phone: (858) 768-5800 Fax: (877) 455-9587