

# Product Data Sheet

## Recombinant Human CCL2 (MCP-1) (carrier-free)

**Catalog # / Size:** 571402 / 10 µg  
571404 / 25 µg  
571406 / 100 µg  
571408 / 500 µg

**Source:** Human MCP1, amino acids Gln24-Thr99 (NM\_002982) was expressed in *E. coli*.

**Molecular Mass:** The 76 amino acid recombinant protein has a predicted molecular mass of approximately 8,685 Da. The DTT-reduced protein migrates at approximately 8kDa and non-reduced protein migrates at approximately 13kDa by SDS-PAGE. The N-terminal amino acid is Glycine.

**Purity:** Purity is >98%, as determined by Coomassie stained SDS-PAGE.

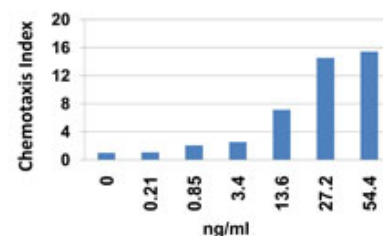
**Endotoxin Level:** Less than 0.01ng per µg cytokine as determined by the LAL method.

**Activity:** ED<sub>50</sub> = 6-15 ng/ml, corresponding to a specific activity of 1.6-0.6 x 10<sup>5</sup> units/mg, as determined by the dose dependent chemoattraction of THP-1 cells

**Preparation:** 10-100µg sizes are bottled at 200µg/mL. 500µg sizes and larger are bottled at the concentration indicated on the vial.

**Formulation:** 0.22 µm filtered protein solution is in 10mM NaHPO<sub>4</sub> pH 7.2, 0.15M NaCl

**Storage:** Unopened vial can be stored at 4°C for three months, at -20°C for six months, or at -70°C for one year. For maximum results, quick spin vial prior to opening. Stock solutions should be prepared at no less than 10 µg/mL in sterile buffer (PBS, DPBS, HBSS, or EBSS) containing carrier protein such as 1% BSA or HSA. For long-term storage, aliquot into polypropylene vials and store in a manual defrost freezer. After dilution, the cytokine can be stored at 4°C for one month or from -20°C to -70°C for up to 3 months. **Avoid repeated freeze/thaw cycles.**



THP-1 cell chemotaxis induced by human MCP-1.

## Applications:

**Applications:** Bioassay

**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 in vivo studies have disclosed critical roles of MCP1 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 cancers, 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/CCR2 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 animal models incorporating genetically deficient mice or therapeutic blockade of MCP-1 receptor (CCR2).

**Antigen References:**

1. Loberg RD, *et al.* 2007. *Cancer Research*. 67:9417-9424.
2. Gregory JL, *et al.* 2006. *J. Immunol.* 177:8072-8079.
3. Qui Z, *et al.* 2009. *Immunology*. 214:835-842.
4. Reichel CA, *et al.* 2009. *Arterioscler Thromb Vasc Biol.* 109:193268v1
5. McQuibban GA, *et al.* 2002. *Blood* 100:1160-1167
5. Tesh GH, *et al.* 2008. *Amm J Physiol Renal Physiol.* 294:F697-F701.



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