ProductInformation

MCP-4, HUMAN
Monocyte Chemotactic Protein 4, human

Product Number **M-246**

Product Description
Source: A DNA sequence encoding mature MCP-4 protein was expressed in *E. coli*[1].
Molecular Weight: Approx. 8.6 kDa recombinant protein containing 75 amino acids

Human MCP-4 is a CC chemokine recently cloned from a human fetal and a human heart cDNA library. Human MCP-4 cDNA encodes a 98 amino acid residue precursor protein with a 23 amino acid residue hydrophobic signal peptide that is cleaved to yield an 8 kDa, 75 aa mature MCP-4. Mature MCP-4 lacks any potential N-glycosylation sites and shares a pyroglutamate proline motif with other human MCP proteins. Human MCP-4 is most homologous to MCP-1, 3 and Eotaxin, exhibiting approximately 65 - 66% amino acid sequence identity. MCP-4 mRNA is expressed by a number of activated cell types, including endothelial cells, macrophages, bronchial epithelium and type II alveolar cells, and perhaps lymphocytes. MCP-4 is a chemoattractant for monocytes and eosinophils, and activates basophils. In addition, it has been reported to be chemotactic for CD4+ and CD8+ T cells, with an activity almost equivalent to that of MCP-3. The bioactivities of MCP-4 is most likely mediated by the CC chemokine receptors CCR-2 and CCR-3, both of which have been shown to bind MCP-4.

Reagents
MCP-4 is supplied lyophilized from a sterile filtered solution in 30% acetonitrile and 0.1% TFA, containing μg of bovine serum albumin per 1 μg of cytokine.

Preparation Instructions
It is recommended that sterile PBS containing at least 0.1% human serum albumin or bovine serum albumin be added to the vial to prepare a stock solution of no less than 10 μg/ml

Storage/Stability
Store tightly sealed at -20°C. After reconstitution and for continuous use, store at 2 - 8°C for up to one month. For extended storage, solution may be frozen in working aliquots. Storage in "frost-free" freezers is not recommended. Repeated freezing and thawing is not recommended.

Product Profile
Biological Activity: Measured by its ability to chemoattract 2 day cultured human monocytes.[2] The ED_{50} for this effect is typically 0.2 - 0.6 μg/ml.

References

1. Uguccioni, M., et al. "Monocyte chemotactic protein 4 (MCP-4), a novel structural and functional analogue of MCP-3 and eotaxin." *J. Exp. Med.* **183**, 2379-2384 (1996).
2. Matsushima, K., et al. "Purification and characterization of a novel monocyte chemotactic and activating factor produced by a human myelomonocytic cell line." *J. Exp. Med.* **169**, 1485-1490 (1989).
3. Garcia-Zepeda, E., et al. "Human monocyte chemoattractant protein (MCP-4) is a novel CC chemokine with activities on monocytes, eosinophils, and basophils induced in allergic and nonallergic inflammation that signals through the CC chemokine receptors CCR-2 and -3." *J. Immunol.* **157**, 5613-5626 (1996).
4. Heath, H., et al. "Chemokine receptor usage by human eosinophils: The importance of CCR3 demonstrated using an antagonistic monoclonal antibody." *J. Clin. Invest.* **99**, 178-184 (1997).
5. Stellato, C., et al. "Production of the novel C-C chemokine MCP-4 by airway cells and comparison of its biological activity to other C-C chemokines." *J. Clin. Invest.* **99**, 926-936 (1997).
6. Godisha, R., et al. "Monocyte chemotactic protein-4: Tissue-specific expression and signaling through C-C chemokine receptor-2." *J. Leukoc. Biol.* **61**, 353-360 (1997).