MCP-4/CCL13 Protein, Human

Cat. No.:	HY-P7245
Synonyms:	rHuMCP-4/CCL13; C-C motif chemokine 13; MCP4; SCYA13
Species:	Human
Source:	E. coli
Accession:	Q99616 (Q24-T98)
Gene ID:	6357
Molecular Weight:	Approximately 12.59 kDa

PROPERTIES

AA Sequence	Q P D A L N V P S T C C F T F S S K K I S L Q R L K S Y V I T T S R C P Q K A V I F R T K L G K E I C A D P K E K W V Q N Y M K H L G R K A H T L K T
Biological Activity	1. Fully biologically active when compared to standard. The biological activity determined by a chemotaxis bioassay using human peripheral blood eosinophils is in a concentration range of 10-100 ng/mL. 2. Measured by its ability to chemoattract THP-1 cells. The ED_{50} this effect is 18.2 ng/mL, corresponding to a specific activity is 5.49×10^4 units/mg.
Appearance	Lyophilized powder.
Formulation	Lyophilized after extensive dialysis against 20 mM PB, pH 7.4, 130 mM NaCl or 20 mM PB, 150 mM NaCl, pH 7.4.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	CCL13, also known as monocyte chemotactic protein MCP-4, is a small cell factor belonging to the CC chemokine family and is located on human chromosome 17. At the amino acid level, human CCL13 shares 65% identity with human CCL2. CCL13 can act as a chemoattractant for monocytes, macrophages, T lymphocytes, immature DCs, eosinophils, and basophils by binding to cell surface G protein-linked chemokine receptors such as CCR1, CCR2, CCR3, CCR5, and CCR11. CCL13 also induces histamine release from basophils and eosinophil degranulation, and causes expression of adhesion molecules and

production of pro-inflammatory cytokines in endothelial cells, epithelial cells and muscle cells[1]. CCL13 plays a role in leukocyte accumulation on both sides of allergic and non-allergic inflammation. Studies have shown that CCL13 is upregulated in asthma and allergic rhinitis and is associated with the number of monocytes/macrophages and eosinophils recruited in the airways of patients. It may be involved in the recruitment of monocytes to the arterial wall during atherosclerotic disease and plays a role in the attraction of monocytes in tissues chronically exposed to exogenous pathogens. ccl13 may also contribute to the development of drug resistance in tumor cells by promoting apoptosis and drug resistance[2].

REFERENCES

[1]. Mendez-Enriquez E, et al. The multiple faces of CCL13 in immunity and inflammation. Inflammopharmacology. 2013 Dec;21(6):397-406.

[2]. Shaoping She, et al. Functional Roles of Chemokine Receptor CCR2 and Its Ligands in Liver Disease. Front Immunol. 2022 Feb 25;13:812431.

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