

## CCL22/MDC Protein, Human

<b>Cat. No.:</b>	HY-P72790
<b>Synonyms:</b>	C-C motif chemokine 22; CCL22; MDC; SCYA22
<b>Species:</b>	Human
<b>Source:</b>	E. coli
<b>Accession:</b>	O00626 (G25-Q93)
<b>Gene ID:</b>	6367
<b>Molecular Weight:</b>	Approximately 8.1-9 kDa

### PROPERTIES

<b>AA Sequence</b>	<p>G P Y G A N M E D S      V C C R D Y V R Y R      L P L R V V K H F Y      W T S D S C P R P G</p> <p>V V L L T F R D K E      I C A D P R V P W V      K M I L N K L S Q</p>
<b>Biological Activity</b>	<p>1. The biological activity determined by a chemotaxis bioassay using human T-lymphocytes is in a concentration range of 10-100 ng/mL.</p> <p>2. Measured by its ability to chemoattract Jurkat cells. The ED<sub>50</sub> for this effect is ≤43.72 ng/mL, corresponding to a specific activity is ≥2.287×10<sup>4</sup> U/mg.</p>
<b>Appearance</b>	Lyophilized powder
<b>Formulation</b>	Lyophilized from a 0.2 μm filtered solution of 20 mM PB, 500 mM NaCl, pH 7.4 or PBS, pH 7.4.
<b>Endotoxin Level</b>	<1 EU/μg; determined by LAL method.
<b>Reconstitution</b>	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH <sub>2</sub> O. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
<b>Storage &amp; Stability</b>	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.
<b>Shipping</b>	Room temperature in continental US; may vary elsewhere.

### DESCRIPTION

<b>Background</b>	<p>CCL22, also known as macrophage-derived chemokine (MDC), a CC chemokine located on chromosome 16 in the human genome, is a protein encoded by the CCL22 gene that shares 37% identity with CCL17 at the amino acid level. CCL22 is secreted by dendritic cells and macrophages and can be upregulated by a variety of stimulatory factors, such as lipopolysaccharides, cytokines. Among them, the Th2 cytokines IL-4 and IL-13 induce CCL22 production in myeloid cells and can be inhibited by the Th1 cytokine IFN-γ. In addition to acting as a potent chemotactic agent for CCR4-expressing Th2</p>
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lymphocytes, monocytes, monocyte-derived dendritic cells, and natural killer cells, CCL22 can also affect its target cells by interacting with the chemokine receptor CCR4. CCL22 is a potent inducer of CCR4 internalization, and CCL22 binding to CCR4 reduces the subsequent functional response of CCR4. The interaction of CCL22 with CCR4 is involved in a variety of pathologies, ranging from allergic reactions and autoimmunity to tumor growth. In contrast, small molecule compounds and antibodies capable of blocking CCL17 and CCL22-mediated recruitment of Th2 and Treg cells have been shown to have positive effects in various disease models of asthma, atopic disease and tumor growth. In addition, an important role of CCL22 and its receptors in TH2 lymphocyte recruitment has been shown in models of allergic airway inflammation. It can also be involved in thymopoiesis by regulating the migration of mature thymocytes through this organ<sup>[1][2]</sup>.

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## REFERENCES

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- [1]. Jan Korbecki, et al. CC Chemokines in a Tumor: A Review of Pro-Cancer and Anti-Cancer Properties of the Ligands of Receptors CCR1, CCR2, CCR3, and CCR4. *Int J Mol Sci.* 2020 Nov 9;21(21):8412.
- [2]. Stefanie Scheu, et al. The C-C Chemokines CCL17 and CCL22 and Their Receptor CCR4 in CNS Autoimmunity. *Int J Mol Sci.* 2017 Nov 2;18(11):2306.
- [3]. Jillian R Richter, et al. Macrophage-derived chemokine (CCL22) is a novel mediator of lung inflammation following hemorrhage and resuscitation. *Shock.* 2014 Dec;42(6):525-31.
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**Caution: Product has not been fully validated for medical applications. For research use only.**

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