

MCP-3/CCL7 Protein, Human

Cat. No.:	HY-P7242
Synonyms:	rHuMCP-3/CCL7; C-C motif chemokine 7; MCP3; SCYA6; SCYA7
Species:	Human
Source:	E. coli
Accession:	P80098 (Q24-L99)
Gene ID:	6354
Molecular Weight:	Approximately 12.97 kDa

PROPERTIES

AA Sequence	<p>Q P V G I N T S T T C C Y R F I N K K I P K Q R L E S Y R R T T S S H C P R E A</p> <p>V I F K T K L D K E I C A D P T Q K W V Q D F M K H L D K K T Q T P K L</p>
Biological Activity	<p>1. Full biological activity determined by a chemotaxis bioassay using human monocytes is in a concentration range of 10-100 ng/mL.</p> <p>2. Measured by its ability to chemoattract THP-1 human acute monocytic leukemia cells. The ED₅₀ this effect is 0.08829 μg/mL, corresponding to a specific activity is 1.132×10⁴ U/mg.</p>
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 μm filtered solution of 20 mM PB, 150 mM NaCl, pH 7.4.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH ₂ O. 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	<p>CCL7, also known as monocyte chemotactic protein 3 (MCP3), is a small cell factor. In the human genome, CCL7 is encoded by the CCL7 gene located on chromosome 17q11.2-q12. It consists of 99 amino acids, including a signal peptide of 23 amino acids, while a mature protein of approximately 76 amino acids is secreted upon signal peptide cleavage. CCL7 is expressed in a variety of cell types, such as stromal cells, keratin-forming cells, airway smooth muscle cells, parenchymal cells, fibroblasts and leukocytes, and tumor cells^[1]. CCL7 is generally present as a monomer and can bind to a variety of</p>
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receptors, including CCR1, CCR2, CCR3, CCR5 and CCR10 to mediate effects on immune cell types. CCL7 can act as a chemoattractant, attracting a variety of leukocytes, including monocytes and neutrophils. It mediates the immune response by recruiting leukocytes to infected tissues and is also involved in monocyte mobilization and recruitment of monocytes to sites of inflammation, as well as inducing neutrophil migration to sites of inflammation by increasing intracellular Ca^{2+} flux. CCL7 is involved in antibacterial, antiviral and antifungal immune responses, as well as being associated with various immune diseases such as ulcerative colitis, multiple sclerosis or non-atopic and atopic asthma. At the same time, CCL7 expression activates antitumor immune responses^[2].

REFERENCES

- [1]. G Opendakker, et al. The human MCP-3 gene (SCYA7): cloning, sequence analysis, and assignment to the C-C chemokine gene cluster on chromosome 17q11.2-q12. *Genomics*. 1994 May 15;21(2):403-8.
- [2]. F Fioretti, et al. Reduced tumorigenicity and augmented leukocyte infiltration after monocyte chemotactic protein-3 (MCP-3) gene transfer: perivascular accumulation of dendritic cells in peritumoral tissue and neutrophil recruitment within the tumor. *J Immunol*. 1998 Jul 1;161(1):342-6.
- [3]. Da-Woon Jung, et al. Tumor-stromal crosstalk in invasion of oral squamous cell carcinoma: a pivotal role of CCL7. *Int J Cancer*. 2010 Jul 15;127(2):332-44.
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