



Recombinant Rat MCP-1 (MCAF, CCL2)

20150227BB



FOR RESEARCH ONLY! NOT FOR HUMAN USE!

Cat.-no.:	R20-010
Size:	10 µg
Lot. No.:	According to product label

Sequence

QPDVAVNAPLT CCYSFTGKMI PMSRLENYKR ITSSRCPKEA
 VVFVTKLKRE ICADPNKEWV QKYIRKLDQN QVRSETTVFY
 KIASLRLTSA PLNVNLTHKS EANASTLFST TTSSTSVEVT SMTEN

Database References

Protein RefSeq:	NP_113718.1
Uniprot ID:	P14844
mRNA RefSeq:	NM_031530.1

Scientific Background

Gene-ID (NCBI):	25364
Synonyms:	Accn1; MDEG1; MDEG2

Rat CCL2 is a member of the β (CC) subfamily of chemokines that is a chemoattractant for monocytes and basophils but not eosinophils or neutrophils. Rat CCL2 is secreted as a 14 kDa glycoprotein monomer but noncovalent dimers probably occur. The first five amino acids of the mature protein are essential for activity; deletion of the N-terminal glutamine, which is pyrrolidone carboxylic acid modified, dramatically decreases activity on basophils and, surprisingly, stimulates eosinophil chemotaxis. The rat CCL2 propeptide shares 82% amino acid (a.a.) identity with mouse CCL2 over the 148 a.a. sequence and 57%, 52%, 52%, 52% and 52% a.a. identity with equine, human, porcine, canine and guinea pig CCL2, respectively, over the first 100 aa. Rat and mouse CCL2 have a 49 aa extension at the C-terminus as compared to human CCL2. Fibroblasts, tumor cells, smooth muscle cells, endothelial cells, and mononuclear phagocytes can produce CCL2 either constitutively or upon mitogenic stimulation. CCL2 is best known as a chemotactic agent for mononuclear cells. It also induces enzyme and cytokine release by monocytes, NK cells and lymphocytes, and histamine release by basophils, primarily due to interaction with CCR2 receptors on these cells. Additionally, it is believed to reduce IL 12 production by dendritic cells and promote a Th2 phenotype in CD4⁺ T cells. The role of CCL2 in recruiting monocytes to sites of inflammation is implicated in the pathology of multiple sclerosis, atherosclerosis and allergic asthma.

Product Specifications

Expressed in	E. coli
Purity	> 98% by SDS-PAGE & HPLC analyses
Endotoxin level	< 0.1 ng /µg of protein (<1EU/µg).
Formulation	lyophilized
Length (aa):	125
MW:	14 kDa

Biological Activity: Determined by its ability to chemoattract human monocytes using a concentration range of 10.0-100.0 ng/ml.



AVOID REPEATED FREEZE AND THAW CYCLES!