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## Human CCL4 (MIP-1 beta) Recombinant Protein

**Catalog Number:** 14-8938

**Also known as:** C-C motif Chemokine 4, Macrophage Inflammatory Protein 1 beta

**RUO: For Research Use Only. Not for use in diagnostic procedures.**

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### Product Information

**Contents:** Human CCL4 (MIP-1 beta) Recombinant Protein

**[REF]** **Catalog Number:** 14-8938

**Concentration:** 0.1 mg/mL

**Handling Conditions:** For best recovery, quick-spin vial prior to opening. Use in a sterile environment.

**Source:** E. coli expressed amino acids Ala24-Asn92, accession number NP\_002975

**Molecular Mass:** 7.8 kDa

**Purity:** > 97%, as determined by SDS-PAGE.

**Endotoxin:** Less than 0.01 ng/ug cytokine, as determined by the LAL assay.

**Bioactivity:** The bioactivity of this protein was determined by transmigration assay of human monocytes, with maximum chemotaxis observed at 25-75 ng/mL.

**Formulation:** Sterile liquid; 0.1 M glycine, 1% BSA, pH 3.0

**Temperature Limitation:** Store at less than or equal to -70°C.

**Batch Code:** Refer to vial

**Use By:** Refer to vial



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### Description

CCL4, also known as MIP-1 beta (Macrophage Inflammatory Protein 1 beta), is a member of the CC- subfamily of chemokines and is most closely related to CCL3, or MIP-1 alpha. These proteins play critical roles in the recruitment of leukocytes to the site of inflammation. While both CCL3 and CCL4 are chemoattractants for monocytes, macrophages, and dendritic cells, CCL4 preferentially attracts CD4+ T cells, while CD8+ T cells are more responsive to CCL3. CCL4 signaling is mediated by the G protein-coupled receptors CCR1, CCR4, and CCR5, which are shared with CCL3 and CCL5 (RANTES). CCR5 is the primary co-receptor for HIV entry, which the virus binds through the gp120 envelope protein. All CCR5 ligands demonstrate potent inhibition of virus entry into the cell, both through steric hindrance of gp120-CCR5 interaction, and ligand-mediated receptor internalization.

### Applications Reported

Human CCL4 Recombinant Protein is biologically active.

### Applications Tested

The bioactivity of this protein was determined by transmigration assay of human monocytes, with maximum chemotaxis observed at 25-75 ng/mL. The ED50 for this effect is less than or equal to 10 ng/mL, which corresponds to a specific activity of greater than or equal to 1 x 10<sup>5</sup> Units/mg.

### References

Brandt SM, Mariani R, Holland AU, Hope TJ, Landau NR. Association of chemokine-mediated block to HIV entry with coreceptor internalization. *J Biol Chem.* 2002 May 10;277(19):17291-1.

Cook DN. The role of MIP-1 alpha in inflammation and hematopoiesis. *J Leukoc Biol.* 1996 Jan;59(1):61-6.

Schall TJ, Bacon K, Camp RD, Kaspari JW, Goeddel DV. Human macrophage inflammatory protein alpha (MIP-1 alpha) and MIP-1 beta chemokines attract distinct populations of lymphocytes. *J Exp Med.* 1993 Jun 1;177(6):1821-6.

### Related Products

14-8970 Human CCL5 (RANTES) Recombinant Protein  
14-8972 Human CCL3 (MIP-1 alpha) Recombinant Protein  
BMS2030INST\* Human MIP-1beta Instant ELISA

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