

**DESCRIPTION**

**Source** *E. coli*-derived  
Ala24-Ala93  
Accession # P16619.1

**N-terminal Sequence Analysis** Ala24

**Predicted Molecular Mass** 7.8 kDa

**SPECIFICATIONS**

**Activity** Measured by its ability to chemoattract 2-day cultured human monocytes.  
The ED<sub>50</sub> for this effect is 1-5 ng/mL.

Measured by its ability to chemoattract BaF3 mouse pro-B cells transfected with human CCR5.  
The ED<sub>50</sub> for this effect is 0.1-0.4 ng/mL.

**Endotoxin Level** <0.01 EU per 1  $\mu$ g of the protein by the LAL method.

**Purity** >97%, by SDS-PAGE under reducing conditions and visualized by silver stain.

**Formulation** Lyophilized from a 0.2  $\mu$ m filtered solution in Acetonitrile and TFA. See Certificate of Analysis for details.

**PREPARATION AND STORAGE**

**Reconstitution** Reconstitute at 100  $\mu$ g/mL in sterile PBS.

**Shipping** The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

**Stability & Storage** Use a manual defrost freezer and avoid repeated freeze-thaw cycles.

- 12 months from date of receipt, -20 to -70 °C as supplied.
- 1 month, 2 to 8 °C under sterile conditions after reconstitution.
- 3 months, -20 to -70 °C under sterile conditions after reconstitution.

**BACKGROUND**

The macrophage inflammatory protein-1 $\alpha$  (MIP-1 $\alpha$ )/CCL3 and-1 $\beta$  (MIP-1 $\beta$ )/CCL4 are highly homologous CC family chemokines that were originally co-purified from medium conditioned by an LPS-stimulated murine macrophage cell line. Mouse MIP-1 $\alpha$  and MIP-1 $\beta$  are encoded by their respective single-copy genes. In human, additional non-allelic MIP-1 $\alpha$  and MIP-1 $\beta$  genes also exist (1 - 3).

The two human MIP-1 $\alpha$  genes arise by duplication/mutation. They code for MIP-1 $\alpha$  isoforms CCL3/LD78 $\alpha$  and CCL3L1/LD78 $\beta$ , which share 94% amino acid (aa) sequence homology. Whereas the human CCL3/LD78 $\alpha$  is a single-copy gene, the human CCL3L1/LD78 $\beta$  gene copy number varies within the population. Human CCL3L1/LD78 $\beta$  cDNA encodes a 93 aa residue precursor with a 23 aa residue signal peptide that is cleaved to generate a 70 aa mature protein. Human CCL3L1/LD78 $\beta$  binds and signals through chemokine receptors CCR1 and CCR5. When compared to CCL3/LD78 $\alpha$ , CCL3L1/LD78 $\beta$  has higher binding affinity to CCR5, which also functions as a coreceptor for HIV-1 entry. The copy number of CCL3L1 is one of several genetic determinants of HIV-1 susceptibility (4).

**References:**

1. Menten, P. *et al.* (2002) Cytokine Growth Factor Rev. **13**:455.
2. Nibbs, R.J. *et al.* (1999) J. Biol. Chem. **274**:17478.
3. Xin, X. *et al.* (1999) FEBS Lett. **457**:219.
4. Mackay, C.R. (2005) Trends in Molecular Medicine **11**:203.