

Cytokines

Human Recombinant MIP-1 alpha (CCL3)

Macrophage inflammatory protein-1
alpha



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Catalog # 78088
78088.1

10 µg
50 µg

Product Description

Macrophage inflammatory protein-1 alpha (MIP-1 alpha), also known as CCL3, is a member of CC family of chemokines and is most closely related to CCL4 or MIP-1 beta. Human MIP-1 alpha two subtypes (LD78 α and LD78 β) signal mainly through CCR5, which is the major coreceptor required for entry of certain strains of HIV-1 into permissive cells. MIP-1 chemokines are capable of inhibiting HIV-1 infection in susceptible cells. Also, chemokine receptors (CCR1 and CCR5) have been identified for LD78 α , whereas three receptors (CCR1, CCR3, and CCR5) were reported for LD78 β (Menten et al.). MIP-1 alpha exhibits a variety of proinflammatory activities in vitro, including leukocyte chemotaxis, and it inhibits the proliferation of hematopoietic stem cells in vitro and in vivo (Cook). In vitro experiments have shown that human MIP-1 alpha and beta have differential attractant activities for subsets of immune effector cells, with human MIP-1 alpha having greater effects than human MIP-1 beta, particularly on CD8+ T cells and B cells. In addition to chemotaxis, MIP-1 alpha can also activate multiple cell types and induce cytokine production (Schall et al.).

Product Information

Alternative Names: AI323804, G0S19-1, LD78 α , MIP-1a, SCYA3
Accession Number: P10147
Amino Acid Sequence: ASLAADTPTA CCFSYTSRQI PQNFIADYFE TSSQCSKPGV IFLTKRSRQV CADPSEEWWQ KYVSDLELSA
Predicted Molecular Mass: 7.8 kDa
Species: Human
Cross Reactivity: Mouse, Rat
Formulation: Lyophilized after dialysis against phosphate-buffered saline.
Source: E. coli

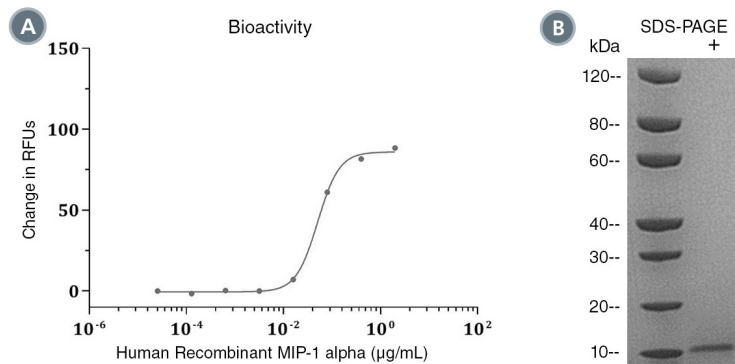
Specifications

Activity: The specific activity is $\geq 1.25 \times 10^4$ units/mg ($EC_{50} \leq 0.0800$ µg/mL) as determined by the FLIPR® assay using CHO cells transfected with human CCR5.
Purity: ≥ 95 %
Endotoxin Level: Measured by kinetic limulus amoebocyte lysate (LAL) analysis and is ≤ 0.2 EU/µg protein.

Preparation and Storage

Storage: Store at -80°C.
Stability: Stable as supplied for 12 months from date of receipt.
Preparation: Centrifuge vial before opening. Resuspend the product in sterile water or phosphate-buffered saline to at least 0.1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex. Store at 2 - 8°C for up to 2 weeks or at -20°C to -80°C for up to 3 months. Avoid repeated freeze-thaw cycles.

Data



(A) The biological activity of Human Recombinant MIP-1 alpha (CCL3) was tested by its ability to mobilize Ca²⁺ using CHO cells transfected with human CCR5, the receptor of human CCL3. Ca²⁺ mobilization was measured using a fluorometric FLIPR® assay method. The EC₅₀ is defined as the effective concentration of the growth factor at which Ca²⁺ mobilization is at 50% of maximum. The EC₅₀ in the example above is less than 0.08 $\mu\text{g/mL}$.

(B) 1 μg of Human Recombinant MIP-1 alpha (CCL3) was resolved with SDS-PAGE under reducing (+) conditions and visualized by Coomassie Blue staining. Human Recombinant MIP-1 alpha (CCL3) has a predicted molecular mass of 7.8 kDa.

Related Products

For a complete list of cytokines, as well as related products available from STEMCELL Technologies, please visit our website at www.stemcell.com/cytokines or contact us at techsupport@stemcell.com.

References

- Cook DN. (1996) The role of MIP-1 alpha in inflammation and hematopoiesis. *J Leukoc Biol* 59(1): 61–6.
- Menten P et al. (2002) Macrophage inflammatory protein-1. *Cytokine Growth Factor Rev* 13(6): 455–81.
- Schall TJ et al. (1993) Human macrophage inflammatory protein alpha (MIP-1 alpha) and MIP-1 beta chemokines attract distinct populations of lymphocytes. *J Exp Med* 177(6): 1821–6.

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