ADVANCED TARGETING SYSTEMS

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Macrophage Inflammatory Protein-1 Alpha Human Recombinant (CCL3)

CHEMOKINE

Catalog Number: PRP-233
Quantity: 5 micrograms, 20 micrograms, 1 milligram
Format: Sterile-filtered white lyophilized (freeze-dried) powder
Host: *E. coli*

Background:

Macrophage Inflammatory Proteins (MIP) belong to the family of chemotactic cytokines known as chemokines. In humans, there are two major forms, MIP-1α and MIP-1β that are now officially named CCL3 and CCL4 respectively. Both are major factors produced by macrophages after they are stimulated with bacterial endotoxins. They activate human granulocytes (neutrophils, eosinophils and basophils) which can lead to acute neutrophilic inflammation. They also induce the synthesis and release of other pro-inflammatory cytokines such as interleukin 1 (IL-1), IL-6 and TNF-α from fibroblasts and macrophages. The genes for CCL3 and CCL4 are both located on human chromosome 17.

Specificity and Preparation:

Macrophage Inflammatory Protein-1 alpha (MIP-1a) Human Recombinant produced in *E. coli* is a single, non-glycosylated, polypeptide chain containing 70 amino acids and having a molecular mass of 7820 Dalton. The MIP-1a is purified by proprietary chromatographic techniques. The protein was lyophilized from 0.55 mg/ml solution containing no additives. Purity is greater than 98.0% as determined by RP-HPLC and SDS-PAGE. The biological activity is calculated by the ability of chemo-attraction of Human monocytes using 1-10 ng/ml. The sequence of the first five N-terminal amino acids was determined and was found to be, Ala-Ser-Leu-Ala-Ala. Protein quantitation was carried out by two independent methods:
1. UV spectroscopy at 280 nm using the absorbency value of 0.9 as the extinction coefficient for a 0.1% (1mg/ml) solution. This value is calculated by the PC GENE computer analysis program of protein sequences (IntelliGenetics).
2. Analysis by RP-HPLC, using a calibrated solution of MIP-1a as a Reference Standard.

Usage and Storage:

It is recommended to reconstitute the lyophilized material in sterile 18MΩ-cm H_2O at not less than 100 μg/ml, which can then be further diluted to other aqueous solutions.
Lyophilized material although stable at room temperature for 3 weeks, should be stored desiccated below -18° C. Upon reconstitution material should be stored at 4°C between 2-7 days and for future use below -18°C. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA). Avoid repeated freezing and thawing. Gently spin down material before use; 5-10 seconds in a microfuge should be adequate.

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