

Recombinant Human Macrophage Migration Inhibitory Factor

#R00524

Size: 10 µg/100 µg/500 µg

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.



Warning: This product is intended for scientific research only. It is not to be used for medical or diagnostic procedures in humans or animals, nor as a food, cosmetic, or household product.

Background

Migration Inhibitory Factor (MIF) is a secreted protein without a cleavable signal sequence and is secreted via a specialized, non-classical pathway. It is secreted by macrophages upon stimulation by bacterial lipopolysaccharide (LPS), or by M.tuberculosis antigens. MIF consists of two α -helices and six β -strands, four of which form a β -sheet. The two remaining β -strands interact with other MIF molecules, creating a trimer. Structure-function studies suggest MIF is bifunctional with segregated topology. The N- and C-termini mediate enzyme activity (in theory). Phenylpyruvate tautomerase activity (enol-to-keto) has been demonstrated and is dependent upon Pro at position 1. Amino acids 50-65(a.a.) have also been suggested to contain thiol-protein oxidoreductase activity. MIF has proinflammatory cytokine activity centered around (a.a.) 49 - 65. On fibroblasts, MIF induces, IL-1, IL-8 and MMP expression; on macrophages, MIF stimulates NO

production and TNF- α release following IFN- γ activation. MIF apparently acts through CD74 and CD44, likely in some form of trimeric interaction. Human MIF is active on mouse cells. Human MIF is 90 %, 94 %, 95 %, and 90 % aa identical to mouse, bovine, porcine and rat MIF, respectively.

AA Sequence

MPMFIVNTNVPRASVPDGFELSELTQQLAQATGKPPQ
YIAVHVVPDQLMAFGGSSEPCALCSLHSIGKIGGAQN
RSYSKLLCGLLAERLRISPDRVYINYYDMNAANVGWN
NSTFA

Reconstitution

We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Reconstitute in sterile distilled water or aqueous buffer containing 0.1 % BSA to a concentration of 0.1-1.0 mg/mL. Stock solutions should be apportioned into working aliquots and stored at ≤ -20 °C. Further

dilutions should be made in appropriate buffered solutions.

Product Specification	
Synonyms	GLF, L-dopachrome Isomerase, Phenylpyruvate Tautomerase
Species	Human
Source	Escherichia coli.
Molecular Weight	Approximately 12.5 kDa, a single non-glycosylated polypeptide chain containing 115 amino acids.
Purity	≥95 by SDS-PAGE.
Biological Activity	Fully biologically active when compared to standard. The specific activity is determined by binding rhCD74 in a functional ELISA.
Physical Appearance	Sterile Filtered White lyophilized (freeze-dried) powder.
Formulation	Lyophilized from a 0.2 μm filtered concentrated solution in

	PBS, pH 7.4. with 5% trehalose, 0.02% Tween-80.
Endotoxin	Less than 1 EU/μg of rHuMIF as determined by LAL method.