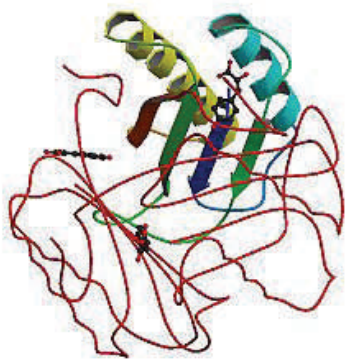
SPECIFICATION SHEET
Rev 082618A

Migration Inhibitor Factor

Human, Recombinant (rHuMIF)

Expressed in *E. coli*
Cat. No. CRP08130
Lot. No. (See product label)



PDB rendering based on 1ca7.
Available structures: 1ca7, 1cgq, 1gcz, 1gd0, 1gif, 1ljt, 1mif, 1p1g, 2ooh, 2oow, 2ooz

PRODUCT INFORMATION

Description: Human 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 have also been suggested to contain thiol-protein oxidoreductase activity. MIF has proinflammatory cytokine activity centered around aa's 49 - 65. On fibroblasts, MIF induces, IL-1, IL-8 and MMP expression; on macrophages, MIF stimulates NO production and TNF-α release folllowing 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.

Amino-Acid Sequence: 123*aa.* non-glycosylated

M. W. : Approximately 13.5 kDa

Recombinant: Expressed in *E. coli*

Purity: >95% by SDS-PAGE and HPLC analyses.

Formulation: Lyophilized from a 0.2μm filtered concentrated (1mg/ml) solution in 1×PBS, pH 7.4.

Specific Activity: Fully biologically active measured by its ability to bind rhCD74 in a functional ELISA.

Endotoxin: Less than 1EU/μg of rHuMIF as determined by LAL method.

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.

Storage: This lyophilized preparation is stable for several weeks at 2-8°C, but should be kept at -20°C for long term storage, preferably desiccated. Upon reconstitution, the preparation is stable for up to one week at 2-8°C. For maximal stability, apportion the reconstituted preparation into working aliquots and store at -20°C to -70°C. Avoid repeated freeze/thaw cycles.

FOR RESEARCH USE ONLY

GENE INFORMATION

Gene Name: MIF
Synonmys: GIF; GLIF; MMIF; macrophage migration inhibitory factor (glycosylation-inhibiting factor); MIF_HUMAN; EC 5.3.2.1; Phenylpyruvate tautomerase.
mRNA Refseq: NM_002415
Protein Refseq : NP_002406
MIM: 153620
UniProt ID: P14174
Gene ID: 4282
Chromosome Location: 22q11.23
Pathway: Phenylalanine metabolism;Tyrosine metabolism.
Function: cytokine activity; isomerase activity; phenylpyruvate tautomerase activity; protein binding.

REFERENCES

1.lBucala R (1997). MIF rediscovered: cytokine, pituitary hormone, and glucocorticoid-induced regulator of the immune response. FASEB J. 10 (14): 1607–13.

2.Lolis E, Bucala R (2006). Macrophage migration inhibitory factor. Expert Opin. Ther. Targets 7 (2): 153–64.

3.Calandra T, Roger T (2003). Macrophage migration inhibitory factor: a regulator of innate immunity. Nat. Rev. Immunol. 3 (10): 791–800.

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