

Recombinant Human Macrophage Migration Inhibitory Factor

Human, Recombinant (MIF)

Expressed in *E. coli*

Cat. No. CRP08130

Lot. No. (See product label)

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 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.

Amino-Acid Sequence: 123aa. 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 0.2 μ m filtered concentrated (1mg/ml) solution in 1 \times PBS, pH 7.4.

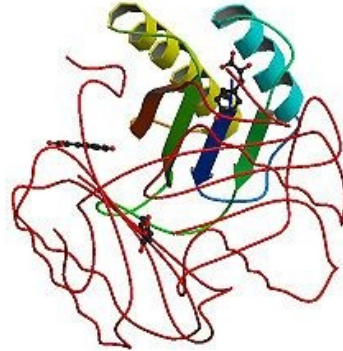
Specific Activity: Fully biologically active measured by its ability to bind rhCD74 in a functional ELISA.

Endotoxin: Less than 1EU/ μ g 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

FOR RESEARCH USE ONLY



PDB rendering based on 1ca7.

Available structures: [1ca7](#), [1cgg](#), [1qcz](#), [1qd0](#), [1qif](#), [1jit](#), [1mif](#), [1p1g](#), [2ooh](#), [2oow](#), [2ooz](#)

GENE INFORMATION

Gene Name: [MIF](#)

Synonyms: GIF; GLIF; MMIF; macrophage migration inhibitory factor (glycosylation-inhibiting factor); MIF_HUMAN; EC 5.3.2.1; Phenylpyruvate tautomerase; MIF

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. Bucala 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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45-16 Ramsey Road Shirley, NY 11967, USA
Technical Support: T: 631-871-5806 · F: 631-207-8356
E-mail: info@creative-biolabs.com
www.creative-biolabs.com