

General Information

Synonyms	GIFmacrophage migration inhibitory factor; GLIF; MMIF; Phenylpyruvate tautomerase
Accession #	P34884
Source	Human embryonic kidney cell, HEK293-derived mouse MIF protein
	Pro2-Ala115
Predicted Molecular weight	13.3 kDa

Components and Storage

Formulation	Solution protein. Dissolved in sterile PBS buffer . This solution can be diluted into other aqueous buffers. Centrifuge the vial prior to opening.
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Storage and Stability	Avoid repeated freeze-thaw cycles. It is recommended that the protein be aliquoted for optimal storage. 12 months from date of receipt, -20 to -70 ° C as supplied.
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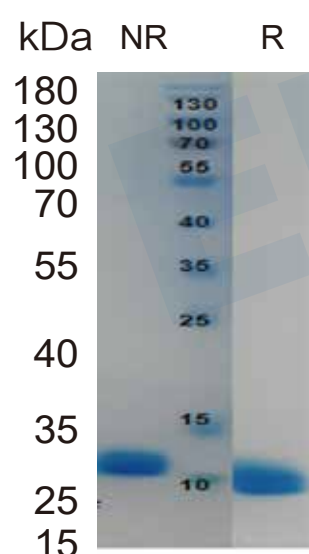
Shipping	Shipping with dry ice
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Quality

Purity	> 95%, determined by SDS-PAGE
Endotoxin Level	<0.010 EU per 1 ug of the protein by the LAL method
Activity	Activity in progress

SDS-PAGE

Bioactivity



4 ug/lane protein was resolved with SDS-PAGE under non-reducing (NR) and reducing (R) conditions and visualized by Coomassie Blue staining.

Activity in progress

Background

MIF (or macrophage migration inhibitory factor) was the first lymphokine/cytokine to be recognized in the pregenomics era (1, 2). Regardless, it is one of the least understood of all inflammatory mediators (1, 3). Mouse MIF is a 12.5 kDa, 115 amino acid (aa) nonglycosylated polypeptide that is synthesized without a signal sequence (4-7). Secretion occurs nonclassically via an ABCA1 transporter (6). The initiating Met is removed, leaving Pro as the first amino acid. The molecule consists of two alpha-helices and six beta-strands, four of which form a beta-sheet. The two remaining beta-strands interact with other MIF molecules, creating a trimer (2, 8). Structure-function studies suggests 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 (9). Amino acids 3-23 have also been shown to be reminiscent of a GST glutathione-binding domain (10). MIF has proinflammatory cytokine activity centered on aa's 49-65. On fibroblasts, MIF induces, IL-1, IL-8 and MMP expression; on macrophages, MIF stimulates, NO production and TNF-alpha release following IFN-gamma activation (11, 12). Mouse MIF apparently acts through CD74 and CD44, likely in some form of trimeric interaction (13, 14). Mouse MIF is active on human cells, while human MIF is active on mouse cells (12). Mouse MIF is 99%, 84%, 90%, and 90% aa identical to rat, porcine, bovine and human MIF, respectively.

Reference

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