Datasheet

Cat. No. PM2031

Recombinant Mouse MIF, Tag Free

Information

Accession #	P34884
Alternate Names	GIFmacrophage migration inhibitory factor; GLIF; MMIF; Phenylpyruvate tautomerase
Source	Human embryonic kidney cell, HEK293-derived mouse MIF protein
Protein sequence	Pro2-Ala115
M.Wt	13.3 kDa
Appearance	Solution protein
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.
Concentration	0. 2 mg/mL
Formulation	Dissolved in sterile PBS buffer.
Reconstitution	We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. This solution can be diluted into other aqueous buffers.
Biological Activity	Activity in progress
Shipping Condition	Shipping with dry ice.
Handling	Centrifuge the vial prior to opening.
Usage	For Research Use Only! Not to be used in humans.

Quality Control

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

Description

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 reminescent 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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