Datasheet

Cat. No. P1593

Recombinant Human Macrophage Migration Inhibitory Factor

Information

Gene ID	
Accession #	
Alternate Names	GLF, L-dopachrome Isomerase, Phenylpyruvate Tautomerase
Source	Escherichia coli.
M.Wt	Approximately 12.5 kDa, a single non-glycosylated polypeptide chain containing 115 amino acids.
AA Sequence	MPMFIVNTNV PRASVPDGFL SELTQQLAQA TGKPPQYIAV HVVPDQLMAF GGSSEPCALC SLHSIGKIGG AQNRSYSKLL CGLLAERLRI SPDRVYINYY DMNAANVGWN NSTFA
Appearance	Sterile Filtered White lyophilized (freeze-dried) powder.
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
Formulation	Lyophilized from a 0.2 μm filtered concentrated solution in PBS, pH 7.4. with 5% trehalose, 0.02% Tween-80.
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.
Biological Activity	Fully biologically active when compared to standard. The specific activity is determined by binding rhCD74 in a functional ELISA.
Shipping Condition	Gel pack.
Handling	Centrifuge the vial prior to opening.
Usage	For Research Use Only! Not to be used in humans.

Components and Storage

Components	10μg	100μg	500μg
Recombinant Human Macrophage Migration Inhibitory Factor	10μg	100μg	500μg

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- 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

Quality Control

Purity	⩾95 by SDS-PAGE.
Endotoxin	Less than 1 EU/μg of rHuMIF as determined by LAL method.

Description

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 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.

Reference

1. Edwards KM, Tomfohr LM, Mills PJ, et al. 2011. Sleep, 34: 161-3
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3. Leu RW, Woodson PD, Whitley SB. 1977. J Reticuloendothel Soc, 22: 329-40
4. Landolfo S. 1977. G Batteriol Virol Immunol, 70: 137-43
5. Baugh JA, Chitnis S, Donnelly SC, et al. 2002. Genes Immun, 3: 170-6.

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