9051 Mira Mesa Blvd, #910094
San Diego, CA 92191
Tel: 760-390-3989

M CSF Human

Macrophage-Colony Stimulating Factor Human Recombinant
GRF0249

Product Overview

Name	M CSF Human
Description	
Macrophage-Colony Stimulating Factor Human Recombinant	
Accession (Primary)	P09603
Synonyms	
Macrophage Colony Stimulating Factor, CSF-1, Lanimostim, MCSF, MGC31930, M-CSF.	
Introduction	
Granulocyte/Macrophage Colony-Stimulating Factors are cytokines that act in hematopoiesis by controlling the production, differentiation, and function of 2 related white cell populations of the blood, the granulocytes and the monocytes-macrophages. MCSF induces cells of the monocyte/macrophage lineage. MCSF plays a role in immunological defenses, bone metabolism, lipoproteins clearance, fertility and pregnancy.	
Source	
Escherichia Coli.	
Physical Appearance	
Sterile Filtered White lyophilized (freeze-dried) powder.	
Formulation	
The MCSF protein was lyophilized with 10mM sodium Phosphate, pH-8.0 & 50mM NaCl.	
Stability	
Lyophilized MCSF although stable at room temperature for 3 weeks, should be stored desiccated below -18°C. Upon reconstitution MCSF should be stored at 4°C between 2-7 days and for future use below -18°C. Please prevent freeze-thaw cycles.	
Purity	
Greater than 95.0% as determined by SDS-PAGE.	
Amino acid sequence	
MEEVSEYCSH MIGSGHLQSL QRLIDSQMET SCQITFEFVD QEQLKDPVCY LKKAFLLVQD IMEDTMRFRD NTPNAIAIVQ LQELSLRLKS CFTKDYEEHD KACVRTFYET PLQLLEKVKN VFNETKNLLD KDWNIFSKNC NNSFAECSSQ GHERQSEGS.	
Biological Activity	

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The ED50, calculated by the dose-dependent stimulation of the proliferation of murine M-NFS-60 indicator cells was found to be 1.15ng/ml corresponding to a specific activity of 8.7x10 5 Units/mg.

Solubility

It is recommended to reconstitute the lyophilized MCSF in sterile 18M-cm H2O not less than 100 µg/ml, which can then be further diluted to other aqueous solutions.

Background

M-CSF (Macrophage-Colony Stimulating Factor) Human Recombinant: Unraveling Its Role in Macrophage Biology and Beyond Abstract: M-CSF (Macrophage-Colony Stimulating Factor), also known as Lanimostim, MCSF, or MGC31930, is a crucial growth factor that regulates the development, proliferation, and function of macrophages. This research paper aims to provide a comprehensive analysis of the molecular characteristics, signaling pathways, and diverse physiological functions of M-CSF. Additionally, it explores the therapeutic implications of M-CSF in various diseases and disorders. Synonyms such as Lanimostim, MCSF, and MGC31930 associated with the protein are discussed throughout the paper to highlight their relevance in scientific literature. Introduction: M-CSF, also known as Lanimostim, MCSF, or MGC31930, is a growth factor that plays a critical role in the regulation of macrophage biology. This section introduces M-CSF and its synonyms, highlighting their significance and relevance in scientific research. Molecular Characteristics of M-CSF: This section explores the molecular characteristics of M-CSF, including its primary amino acid sequence, protein structure, and post-translational modifications. The importance of these factors in determining M-CSF's biological activity and receptor binding is discussed. Signaling Pathways Activated by M-CSF: M-CSF activates specific signaling pathways upon binding to its receptor, leading to diverse cellular responses. This section focuses on the activation of the MAPK/ERK and PI3K/Akt pathways. The downstream effectors and transcriptional regulators involved in mediating M-CSF's cellular responses are also discussed. Physiological Functions of M-CSF: M-CSF plays critical roles in various physiological processes, particularly in macrophage development, survival, polarization, and immune regulation. This section provides an in-depth analysis of M-CSF's contributions to these processes, emphasizing its role in hematopoiesis, tissue homeostasis, wound healing, and host defense. Therapeutic Implications of M-CSF: The unique properties of M-CSF make it a promising therapeutic candidate for various diseases and disorders. This section discusses the potential applications of M-CSF in immunotherapy, tissue regeneration, cancer treatment, and autoimmune diseases. The challenges and future directions in utilizing M-CSF as a therapeutic agent are also explored. M-CSF in Disease Pathogenesis: M-CSF dysregulation is implicated in the pathogenesis of several diseases, including cancer, inflammation, and bone disorders. This section examines the role of M-CSF in promoting tumor progression, macrophage-mediated inflammation, osteoclast differentiation, and metabolic diseases. The therapeutic implications and targeting of M-CSF in disease management are also discussed. Conclusion: M-CSF, also known as Lanimostim, MCSF, or MGC31930, is a critical growth factor involved in macrophage biology and disease pathogenesis. Understanding the molecular characteristics, signaling pathways, and physiological functions of M-CSF contributes to the exploration of its therapeutic potential in various disorders.

References

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1. Title :Osteoclasts Control Osteoblast Chemotaxis via PDGF-BB/PDGF Receptor Beta Signaling. Publication :Sanchez-Fernandez MA, Gallois A, Riedl T, Jurdic P, Hoflack B (2008) Osteoclasts Control Osteoblast Chemotaxis via PDGF-BB/PDGF Receptor Beta Signaling. PLoS ONE 3(10): e3537. doi:10.1371/journal.pone.0003537. Link : M CSF prospec publication 2. Title :Suppressor of cytokine signalling-3 at pathological levels does not regulate lipopolysaccharide or interleukin-10 control of tumour necrosis factor-? production by human monocytes. Publication :Article first published online: 11 MAY 2006 DOI: 10.1111/j.1365-2567.2006.02383.x Link : M CSF Human prospec publication

Precautions

M CSF Human is for research use only and not for use in diagnostic or therapeutic procedures.

Target Information: (P09603)

Background

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References for protein:

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