Cytokines

Rat Recombinant GM-CSF

Granulocyte-macrophage colony-stimulating factor

Catalog #

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<th>Catalog #</th>
<th>Amount (μg)</th>
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Product Description

Granulocyte-macrophage colony-stimulating factor (GM-CSF) promotes the proliferation and differentiation of hematopoietic progenitor cells and the generation of neutrophils, eosinophils, and macrophages. In synergy with other cytokines such as stem cell factor, IL-3, erythropoietin, and thrombopoietin, it also stimulates erythroid and megakaryocyte progenitor cells (Barreda et al.). GM-CSF is produced by multiple cell types, including stromal cells, Paneth cells, macrophages, dendritic cells (DCs), endothelial cells, smooth muscle cells, fibroblasts, chondrocytes, and Th1 and Th17 cells (Francisco-Cruz et al.). The receptor for GM-CSF (GM-CSFR) is composed of two subunits: the cytokine-specific α subunit (GMRα; CD116) and the common subunit βc (CD131) shared with IL-3 and IL-5 receptors (Broughton et al.). GM-CSFR is expressed on hematopoietic cells, including progenitor cells and immune cells, as well as non-hematopoietic cells. GM-CSF is able to stimulate the development of DCs that ingest, process, and present antigens to the immune system (Francisco-Cruz et al.). Recombinant rat GM-CSF is reactive with mouse cells (Oaks et al.; Vandenabeele et al.).

Product Information

Alternative Names: Colony-stimulating factor 2, CSF-2, MGI-1GM, Pluripoietic-alpha
Accession Number: P48750
Amino Acid Sequence: MAPTRSPNPV TRPWKHVDAL KEALSLLNDM RALENEKNED VDIISNEFSI QRPTCVQTRL KLYKQGLRGN LTKLNGALTM IASHYQTNCPL PTPETDCEIE VTTFEDFIKN LKGFLFDIPF DCWKPVQK
Predicted Molecular Mass: 14.7 kDa
Species: Rat
Cross Reactivity: Mouse
Formulation: Lyophilized from a sterile filtered aqueous solution containing sodium bicarbonate, pH 8.5.
Source: E. coli

Specifications

Activity: The specific activity is ≥ 5 x 10^7 units/mg (EC50 ≤ 0.02 ng/mL) as determined by a cell proliferation assay using FDC-P1 cells.
Purity: ≥ 95%
Endotoxin Level: Measured by kinetic limulus amebocyte lysate (LAL) analysis and is ≤ 1 EU/μg protein.

Preparation and Storage

Storage: Store at -20°C to -80°C.
Stability: Stable as supplied for 12 months from date of receipt.
Reconstitution: Centrifuge vial before opening. Resuspend the product in sterile water containing 0.1% bovine serum albumin (BSA) to at least 0.1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex. Store at 2 - 8°C for up to 1 month or at -20°C to -80°C for up to 3 months. Avoid repeated freeze-thaw cycles. NOTE: If reconstituted product will be used immediately BSA is not required.
(A) The biological activity of Rat Recombinant GM-CSF was tested by its ability to promote the proliferation of FDC-P1 cells. Cell proliferation was measured after 91 hours of culture using a fluorometric assay method. The EC50 is defined as the effective concentration of the growth factor at which cell proliferation is at 50% of maximum. The EC50 in the above example is 0.9 - 1.3 pg/mL. (B) 1 μg of Rat Recombinant GM-CSF was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining. Rat Recombinant GM-CSF has a predicted molecular mass of 14.5 kDa.

Related Products
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References