Technical Data Sheet

Recombinant Mouse GM-CSF

Product Information

Material Number:	**554586**
Size:	10 µg
Concentration:	200 µg/ml
Reactivity:	QC Testing: Mouse
Storage Buffer:	Frozen aqueous buffered solution containing BSA.

Description

Mouse granulocyte-macrophage colony-stimulating factor (GM-CSF) is a cytokine made by activated T cells, macrophages, vascular endothelial cells and fibroblasts. It has potent stimulatory effects on the growth and differentiation of bone marrow progenitor cells that generate granulocytes, monocytes/macrophages, and megakaryocytes. In peripheral tissues, GM-CSF can act on mature leukocytes to promote inflammatory responses. Mouse GM-CSF runs as a 15.5 - 19 kD band in reducing and non-reducing SDS-PAGE analysis. Mouse GM-CSF protein contains 124 amino acid residues. Recombinat mouse GM-CSF (Cat. No. 554586) is supplied as a frozen liquid comprised of 0.22 um sterile-filtered aqueous buffered solution containing bovine serum albumin, with no preservatives. Recombinant mouse GM-CSF is ≥ 95% pure as determined by SDS-PAGE and an absorbance assay based on the Beers-Lambert law. The endotoxin level is ≤ 0.1 ng per µg of mouse GM-CSF, as measured in chromogenic LAL assay.

Preparation and Storage

Store product at -80°C prior to use or for long term storage of stock solutions.
Rapidly thaw and quick-spin product prior to use.
Avoid multiple freeze-thaws of product.
This preparation contains no preservatives, thus it should be handled under aseptic conditions.

Application Notes

Application

ELISA Standard	Routinely Tested
Bioassay	Tested During Development
Blocking	Tested During Development

Recommended Assay Procedure:

Upon initial thawing, recombinant mouse GM-CSF (Cat. No. 554586) should be aliquoted into polypropylene microtubes and frozen at -80°C for future use. Alternatively, the product can be diluted in sterile neutral buffer containing not less than 0.5 - 10 mg/mL carrier protein, such as human or bovine albumin, aliquoted and stored at -80°C. For *in vitro* biological assay use, carrier protein concentrations of 0.5 - 1 mg/mL are recommended. For use as an ELISA standard, carrier-protein concentrations of 5 - 10 mg/mL are recommended. Failure to add carrier protein or store at indicated temperatures may result in a loss of activity. This product should not be diluted to less than 5 µg/mL for long term storage. Carrier proteins should be pre-screened for possible effects in each investigator's experimental system. Carrier proteins may have an undesired influence on experimental results due to toxicity, high endotoxin levels or possible blocking activity.

ELISA Standard: Recombinant mouse GM-CSF (Cat. No. 554586) can be useful as a quantitative standard for measuring mouse GM-CSF protein levels using sandwich ELISA with the purified MP1-22E9 antibody (Cat. No. 554404) as a capture antibody and biotinylated MP1-31G6 antibody (Cat. No. 554407) as the detection antibody. To obtain linear standard curves, investigators may want to consider using doubling dilutions of recombinant mouse GM-CSF standard from 2,000 - 15 pg/mL to be included in each ELISA plate. For measuring mouse GM-CSF in serum or plasma, investigators are highly encouraged to use the BD OptEIA™ Mouse GM-CSF ELISA Set (Cat. No. 555167).

Bioassay: Investigators are advised that the Bioassay application is not routinely tested for this material and are highly encouraged to both titrate this material and include appropriate controls in relevant experiments. An activity range of 0.25 - 5.0 x 10^9 units/mg, encompassing an ED50= 2 - 35 pg/mL, has previously been reported using MC/9 as indicator cells for proliferation, with a unit defined as the amount of material needed to stimulate a half-maximal response at cytokine saturation.

Blocking: Recombinant mouse GM-CSF (Cat. No. 554586) can be useful as a blocking control for flow cytometric analysis when used with PE-conjugated MP1-22E9 antibody (Cat. No. 554406). Investigators are advised that the blocking application is not routinely tested for this material. Intracellular cytokine staining techniques and the use of blocking controls are described in detail by C. Prussin and D. Metcalfe.

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Suggested Companion Products

Catalog Number	Name	Size	Clone
554404	Purified Rat Anti-Mouse GM-CSF	0.5 mg	MP1-22E9
554407	Biotin Rat Anti-Mouse GM-CSF	0.5 mg	MP1-31G6
554406	PE Rat Anti-Mouse GM-CSF	0.1 mg	MP1-22E9
555167	Mouse GM-CSF ELISA Set	20 plates	(none)

Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.
3. Source of all serum proteins is from USDA inspected abattoirs located in the United States.

References

Gasson JC. Molecular physiology of granulocyte-macrophage colony-stimulating factor. *Blood.* 1991; 77(6):1131-1145. (Biology)

Gough NM, Gough J, Metcalf D, Kelso A, Grail D, Nicola NA, Burgess AW, Dunn AR. Molecular cloning of cDNA encoding a murine haematopoietic growth regulator, granulocyte-macrophage colony stimulating factor. *Nature.* 1984; 309(5971):763-767. (Biology)

Miyatake S, Otsuka T, Yokota T, Lee F, Arai K. Structure of the chromosomal gene for granulocyte-macrophage colony stimulating factor: comparison of the mouse and human genes. *EMBO J.* 1985; 4(10):2561-2568. (Biology)

Price V, Mochizuki D, March CJ, Cosman D, Deeley MC, Klinke R, Clevenger W, Gillis S, Baker P, Urdal D. Expression, purification and characterization of recombinant murine granulocyte-macrophage colony-stimulating factor and bovine interleukin-2 from yeast. *Gene.* 1987; 55:287-293. (Biology)

Prussin C, Metcalfe DD. Detection of intracytoplasmic cytokine using flow cytometry and directly conjugated anti-cytokine antibodies. *J Immunol Methods.* 1995; 188(1):117-128. (Methodology: Flow cytometry)

Thompson-Snipes L, Dhar V, Bond MW, Mosmann TR, Moore KW, Rennick DM. Interleukin 10: a novel stimulatory factor for mast cells and their progenitors. *J Exp Med.* 1991; 173(2):507-510. (Methodology)

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