

Datasheet: PHP235

BATCH NUMBER 170374

Description:	RECOMBINANT HUMAN GM-CSF
Name:	GM-CSF
Other names:	GRANULOCYTE MACROPHAGE COLONY STIMULATING FACTOR
Format:	Rec. Protein
Product Type:	Recombinant Protein
Quantity:	20 µg

Product Details

Applications

This product has been reported to work in the following applications. This information is derived from testing within our laboratories, peer-reviewed publications or personal communications from the originators. Please refer to references indicated for further information. For general protocol recommendations, please visit www.bio-rad-antibodies.com/protocols.

	Yes	No	Not Determined	Suggested Dilution
ELISA	▪			0.2 - 0.4ng/well
Western Blotting	▪			1.5 - 3.0ng/lane
Functional Assays	▪			1.0ng/ml

Where this product has not been tested for use in a particular technique this does not necessarily exclude its use in such procedures. Suggested working dilutions are given as a guide only. It is recommended that the user titrates the product for use in their own system using appropriate negative/positive controls.

Target Species

Human

Product Form

Purified recombinant protein - lyophilized

Reconstitution

Reconstitute with 0.2 ml distilled water. Care should be taken during reconstitution as the protein may appear as a film at the bottom of the vial. Bio-Rad recommend that the vial is gently mixed after reconstitution. For extended storage, the addition of 0.1% bovine serum albumin (BSA) is recommended.

Preparation

Purified recombinant GM-CSF expressed in *E. coli*

Source

E.coli

Preservative Stabilisers

10mM Sodium citrate pH3.5

Carrier Free

Yes

Endotoxin Level	< 1.0 EU/ug
Approx. Protein Concentrations	0.1 mg/ml after reconstitution
External Database Links	<p>UniProt: P04141 Related reagents</p> <p>Entrez Gene: 1437 CSF2 Related reagents</p>
Synonyms	GMCSF
Product Information	<p>Recombinant Human granulocyte-macrophage colony stimulating factor is a highly purified preparation of <i>E. coli</i> produced human GM-CSF.</p> <p>GM-CSF (granulocyte-macrophage colony-stimulating factor) is a haematopoietic growth factor which exists in both glycosylated and non-glycosylated biologically active forms, and stimulates the development of granulocytes, macrophages, early megakaryocytes and eosinophil progenitor cells. The ability of recombinant GM-CSF to increase haematopoietic cell recovery has become a focus area in the therapeutic treatment of patients following bone marrow transplantation.</p>
Protein Molecular Weight	14.6 kDa (128 amino acid residues)
Activity	The ED ₅₀ as determined by the dose-dependent stimulation of the proliferation of human TF-1 cells is ≤ 0.1 ng/ml, corresponding to a specific activity of ≥ 1 x 10 ⁷ units/mg.
Purity	>98% by SDS PAGE/HPLC
References	<ol style="list-style-type: none"> Olivetta, E. <i>et al.</i> (2005) HIV-1 Nef regulates the release of superoxide anions from human macrophages. Biochem J. 390: 591-602. Radford, D.J. <i>et al.</i> (2010) Dehydroepiandrosterone sulfate directly activates protein kinase C-beta to increase human neutrophil superoxide generation. Mol Endocrinol. 24: 813-21. Abadiankenari, S, & Ghasemi, M. (2009) Generation of immune inhibitory dendritic cells and CD4+T regulatory cells inducing by TGF-beta. Iran J Allergy Asthma Immunol. 8: 25-30 Abadiankenari, S. <i>et al.</i> (2011) Human Leukocyte Antigen-G Expression on Dendritic Cells Induced by Transforming Growth Factor-Beta1 and CD4+ T Cells Proliferation. Iran Biomed J. 15: 1-5. Manfredi, F. <i>et al.</i> (2016) The CD8⁺ T Cell-Mediated Immunity Induced by HPV-E6 Uploaded in Engineered Exosomes Is Improved by ISCOMATRIX™ Adjuvant. Vaccines (Basel). 4 (4): pii: E42. Anticoli, S. <i>et al.</i> (2016) Engineered exosomes boost the HCV NS3-specific CD8⁺ T lymphocyte immunity in humans. Trials Vaccinol. 5: 105-10.

7. Chiozzini, C. *et al.* (2017) Trans-dissemination of exosomes from HIV-1-infected cells fosters both HIV-1 trans-infection in resting CD4⁺ T lymphocytes and reactivation of the HIV-1 reservoir. [Arch Virol. 162 \(9\): 2565-77.](#)

8. Ferrantelli, F. *et al.* (2024) Extracellular vesicle-based anti-HOXB7 CD8(+) T cell-specific vaccination strengthens antitumor effects induced by vaccination against Her2/neu. [Cancer Gene Ther. Sep 19 \[Epub ahead of print\].](#)

Storage

Prior to reconstitution store at -20°C. Following reconstitution store at -20°C.

This product should be stored undiluted.

Storage in frost-free freezers is not recommended. Avoid repeated freezing and thawing as this may denature the protein. Should this product contain a precipitate we recommend microcentrifugation before use.

Guarantee

Guaranteed for 3 months from the date of reconstitution or until the date of expiry, whichever comes first. Please see label for expiry date.

Health And Safety Information

Material Safety Datasheet documentation #10268 available at: <https://www.bio-rad-antibodies.com/SDS/PHP235>

Regulatory

For research purposes only

Product inquiries: www.bio-rad-antibodies.com/technical-support

To find a batch/lot specific datasheet for this product, please use our online search tool at: bio-rad-antibodies.com/datasheets
'M433623:241118'

Printed on 29 Jan 2026