Recombinant Human GM-CSF Protein

Product Name

Recombinant Human GM-CSF Protein

Size / Catalog Number

100μg / GMP-TL302-0100

Product Information

Synonyms: Colony-stimulating factor (CSF), Molgramostin, Sargramostim, CSF2

Accession: UniPort P04141

Expressed Region: Ala18-Glu144

Tag: C-terminal 6×His-tag

Expression system: HEK293 cells

Predicted Molecular weight: 15.3 kDa

Purity: > 95% as determined by SDS-PAGE

Endotoxin: < 0.1 EU per 1 μg of protein (LAL method)

Activity: Measured in a cell proliferation assay using TF-1 cells, corresponding to a specific activity of ≥ 5.0×10^6 IU/mg.

Form: Lyophilized from sterile PBS (pH7.4), typically supplemented with 6% mannitol as a protectant.

Background

Granulocyte-Macrophage Colony-Stimulating Factor (GM-CSF) is a pivotal glycosylated cytokine functioning extracellularly as a homodimer. Its core function is to stimulate the proliferation and differentiation of hematopoietic stem/progenitor cells into granulocytes and monocytes (which mature into macrophages and dendritic cells). Leveraging this, GM-CSF finds extensive application in cell and gene therapy: In cell therapy, it is a critical factor for the *in vitro* expansion of immune cells (e.g., dendritic cells for DC vaccines) and acts as an immune modulator *in vivo* to activate DCs and T cells, enhancing anti-tumor immunity. In gene therapy, its encoding gene (located in the chromosome 5q31 region) serves as a potential target, or therapeutic GM-CSF can be delivered via vectors for localized and sustained expression. Recombinantly produced GM-CSF protein provides an essential tool for these applications, with its potential dual immunomodulatory effects requiring careful evaluation.

Stability & Storage

Lyophilized powder: Stable for 12 months at -80°C or 6 months at -20°C when stored in the original sealed container under desiccant.

Reconstitution: Dissolve in sterile water for injection, 0.9% NaCl, or PBS (pH7.4), maintaining a final concentration ≥ 100 μg/mL to prevent adsorption.

Handling: Aliquot to avoid repeated freeze-thaw cycles.

References

1. Banchereau J, Briere F, Caux C, *et al*. Immunobiology of dendritic cells. Annu Rev Immunol. 2000;18:767-811.

2. Banchereau J, Steinman RM. Dendritic cells and the control of immunity. Nature. 1998 Mar 19;392(6673):245-52.

3. Wculek SK, Cueto FJ, Mujal AM, *et al*. Dendritic cells in cancer immunology and immunotherapy. Nat Rev Immunol. 2020 Jan;20(1):7-24.

Intended Us

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