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Technical Datasheet

Human Recombinant Granulocyte Macrophage Colony- Stimulating Factor

Cell Culture Tested

Product Code: CF014

Product Description:

Source: *E.coli*
Molecular Weight: 21 kDa
Synonyms: GM-CSF , CSF-2, MGI-1GM, Pluripoietin-α

Amino Acid Sequence:

APARSPSPST	QPWEHVNAIQ	EARRLLNLSR
DTAAEMNETV	EVISEMFDLQ	EPTCLQTRLE
LYKQGLRGSL	TKLKGPLTMM	ASHYKQHCPP
TPETSCATQI	ITFESFKENL	KDFLLVIPFD

Granulocyte Macrophage Colony Stimulating Factor is a monomeric glycoprotein that functions as a hematopoietic growth factor and immune modulator. GM-CSF stimulates the development of neutrophils and macrophages, and also the promotes proliferation and development of early erythroid megakaryocytic and eosinophilic progenitor cells. GM-CSF is secreted by macrophages, T-lymphocytes, mast cells, natural killer cells, endothelial cells and fibroblasts. GM-CSF inhibits migration of neutrophil and enhances the functional activity of the mature end-cells. The human and murine molecules are species-specific and exhibit no cross-species reactivity. Recombinant Human GM-CSF is a 21 kDa globular protein consisting of 126 amino acids, expressed in *E. coli.* It has two intramolecular disulfide bonds and two potential N-linked glycosylation sites.

CF014 is Human Recombinant Granulocyte Macrophage Colony Stimulating Factor filtered through 0.2 micron filter and lyophilized from PBS, pH 7.0.

Directions:

1. Centrifuge the vial prior to opening.

   Note: Protein pellet may not be visible in the vial because protein is lyophilized without any carrier protein. As a result, small amount protein may get deposited on the inner walls of the vial during lyophilization in form of a thin and invisible film. aentrifugation causes deposition of any protein sticking to the cap or sides to settle at the vial bottom.

2. Surface sterilize using 70% isopropyl alcohol and take it into laminar air flow cabinet.

3. Aseptically reconstitute the lyophilized powder in sterile cell culture grade water to the NLT 0.1 mg/ml concentration. *Note: Do not vortex.*

4. Upon reconstitution, it can be stored in a buffer containing a carrier protein and store in working aliquots. Avoid repeated freeze-thaw cycles.

Quality Control:

Appearance
Lyophilized powder

Solubility
Soluble at 1.0 mg/ml in cell culture grade water

Purity (by SDS-PAGE and HPLC analysis)
NLT 95%

Endotoxin Content
NMT 1EU/µg

Biological activity (Determined by its ability to stimulate proliferation of human TF-1 cells)
ED_{50}: NMT 0.1 ng/ml.
Specific activity: NLT $1x10^7$ units/mg.

Storage and Shelf Life:

Shelf life of Human Recombinant Granulocyte -Macrophage Colony- Stimulating Factor depends on the storage temperature and the form in which it is stored. Refer the table given below for recommended storage time of different forms of Human Recombinant Granulocyte -Macrophage Colony- Stimulating Factor at different storage temperatures.

Product form	Temperature	Storage time
Lyophilized	-30 to -10°C	2 years
Reconstituted (with carrier protein)	2°C to 8°C	1 month
	-30 to -10°C	6 months

Once reconstituted, aliquot the solution into the smaller volumes and freeze for future use. Repeated freezing and thawing of the reconstituted frozen solution should be avoided as it causes denaturation of protein to some extent.