Tinzyme Co., Limited

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Recombinant Human IFN γ

Product Number: GMP-CI57

Shipping and Storage

This product is a freeze-dried powder, transported at 2-8℃.

Freeze dried products are stored at -20 ℃, with an expiration date visible on the bottle body.

Description

Gamma Interferon (IFN gamma, IFN γ) Interferons belonging to class II can activate macrophages and induce the expression of MHC I, MHC II, and co activating molecules on antigen-presenting cells (APCs). In addition, IFN gamma can induce changes in the expression of proteasomes, thereby enhancing antigen presentation ability. IFN gamma can also promote the differentiation of CD4+T cells into Th1 and inhibit the switching of IL-4 dependent B cell subtypes. IFN gamma activates the JAK-STAT cell pathway by phosphorylating JAK1 and JAK2 proteins.

The immunomodulatory effect of interferon is manifested in its impact on the activity of host immune cells, such as macrophages, T cells, B cells, and NK cells.

1. IFN gamma can increase the expression of MHC class II molecules on the surface of macrophages, enhancing their antigen presentation ability; Upregulation of macrophage Fc receptors promotes macrophage phagocytosis of immune complexes, antibody coated pathogens, and tumor cells.
2. IFN gamma has a promoting effect on the differentiation of B cells and CD8+T cells, but cannot promote their proliferation. IFN gamma can enhance the activity of TH1 cells and enhance cellular immune function.
3. IFN gamma also has a wide range of effects on other cells:
   - 3.1. Stimulate neutrophils and enhance their phagocytic ability;
   - 3.2. Activate NK cells and enhance their cytotoxicity;
   - 3.3. Enable certain cells that do not normally express MHC class II molecules, such as endothelial cells, certain epithelial cells, and connective tissue cells, to express MHC class II molecules and exert antigen-presenting effects.

The recombinant human IFN gamma protein is expressed in mammalian cells and is produced using non animal derived materials and pharmaceutical excipients. Implement the Good Manufacturing Practice for Drugs (revised in 2010), strictly control bacterial endotoxin residues, host protein residues, exogenous DNA residues, etc., to ensure product quality, safety, and effectiveness.

Element	Standard
Appearance	White loose body
Redissolution	Compliant with regulations
Visible foreign objects	Compliant with regulations
PH	6.9-7.9
Purity	≥ 95%
Activity	≥ 2.0×10^7 IU/mg
Bacterial endotoxin content	<10EU/mg
Host protein residue	≤ 0.005%
Exogenous DNA residues	≤ 100pg/mg
Mycoplasma detection	Negative
Sterility inspection	Compliant with regulations

Complying to Following Regulations

1. Good Manufacturing Practice for Drugs (Revised in 2010).
2. GMP Appendix - Cell Therapy Products - National Medical Products Administration.
3. The 2020 edition of the Chinese Pharmacopoeia is published by the National Pharmacopoeia Commission.

4. USP Chapter<1043>, Ancillary Materials for Cell, Gene, and Tissue Engineering Products are excipients used in cell therapy, gene therapy, and tissue engineering products.
5. USP Chapter<92>, Growth Factors and Cytokines Used in Cell Therapy Manufacturing.
6. Ph. Eur. General Chapter 5.2.12, Raw Materials of Biological Origin for the Production of Cell based and Gene Therapy Medical Products.

Application

1. Can be used for various in vitro cell cultures.
2. IFN gamma can upregulate the expression of IL-2R on the surface of peripheral blood lymphocytes, thereby enhancing the sensitivity and intensity of T cells to Recombinant Human IL-2 (GMP-C013) induced proliferation response. The addition of IFN gamma during the induction of CIK cell formation can reduce the dosage of Recombinant Human IL-2. Research has found that the order in which IFN gamma is added is closely related to the cytotoxic activity of CIK. Adding IFN gamma for 24 hours before adding Recombinant Human IL-2 can significantly enhance the cytotoxic activity of CIK.

Note

1. Before use, check that the storage conditions and product expiration date meet the regulations.
2. Dissolve with water for injection, protein concentration>100ug/ml.
3. Product re dissolution and packaging are strictly controlled for sterility and pyrogen free.
4. After the product is re dissolved and packaged, it can be stored at -70℃ to avoid repeated freeze-thaw cycles that may cause protein denaturation and other possible contamination risks.

Related products

Product Number	Product Name
GMP-C013	Recombinant Human IL-2
GMP-C016	Recombinant Human IL-15