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Product Information

Tumor Necrosis Factor- α human, recombinant expressed in *E. coli*

Product Number **T6674**
Storage Temperature $-20\text{ }^{\circ}\text{C}$

Synonym: TNF- α ; cachectin

Product Description

Tumor Necrosis Factor- α (TNF- α) is a protein secreted by lipopolysaccharide-stimulated macrophages and causes tumor necrosis *in vivo* when injected into tumor-bearing mice.¹ Also known as cachectin, TNF- α is believed to mediate pathogenic shock and tissue injury associated with endotoxemia.² TNF- α exists as a multimer of two, three, or five non-covalently linked units, but shows a single 17.4 kDa band with SDS-PAGE under non-reducing conditions.³

TNF- α is closely related to the 25 kDa protein Tumor Necrosis Factor- β (lymphotoxin), sharing the same receptors and cellular actions.⁴ TNF- α causes cytolysis or cytoablation of certain transformed cells,^{5,6} being synergistic with γ -interferon in its cytotoxicity.⁷ Although it has little effect on many cultured normal human cells,⁶ TNF- α appears to be directly toxic to vascular endothelial cells.⁸ Other actions of TNF- α include stimulating growth of human fibroblasts and other cell lines,⁹ activating polymorphonuclear neutrophils¹⁰ and osteoclasts,¹¹ and inducing interleukin-1, prostaglandin E₂, and collagenase production.^{12,13} TNF- α is currently being evaluated in treatment of certain cancers and AIDS-Related Complex.

This product is lyophilized from a 0.2 μm -filtered buffer solution containing Tris-HCl, pH 8.0, with 5% trehalose.

Purity: $\geq 97\%$ (SDS-PAGE)

Biological activity (ED₅₀): 0.02-0.3 ng of TNF- α /ml

The ED₅₀ is defined as the effective concentration of growth factor that elicits 50% inhibition of cell growth. The biological activity of TNF- α is measured in culture by the cytolysis of murine L929 cells, a TNF- α sensitive mouse fibrosarcoma line.

Endotoxin: $< 0.1\text{ ng}/\mu\text{g}$ of TNF- α

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

Reconstitute the contents of the vial using 0.2 μm -filtered distilled water to a concentration of 0.1 - 1.0 mg/ml. Allow the reconstituted solution to sit at room temperature for 5–10 minutes before use. The solution may be further diluted to a working stock solution using aqueous buffers. If aseptic technique is used, additional filtration should not be necessary and should be avoided due to possible adsorption onto the filter membrane.

Storage/Stability

Store the lyophilized product at $-20\text{ }^{\circ}\text{C}$. Store the reconstituted solution in working aliquots at $-20\text{ }^{\circ}\text{C}$. Repeated freezing and thawing is not recommended.

References

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