



Product Information

TUMOR NECROSIS FACTOR-ALPHA (TNF- α) HUMAN, RECOMBINANT Expressed in Yeast

Product Number **T 0157**

Product Description

Tumor Necrosis Factor-Alpha (TNF- α) is a protein secreted by lipopolysaccharide-stimulated macrophages which causes tumor necrosis *in vivo* when injected into tumor-bearing mice.¹ Also known as chachectin, TNF- α is believed to mediate pathogenic shock and tissue injury associated with endotoxemia². TNF- α exists as a multimer of two, three, or five non-covalently linked units but shows a single 17 kDa band with SDS-PAGE under non-reducing conditions.³ The product is closely related to the 25 kDa protein Tumor Necrosis Factor-Beta (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 growth of human fibroblasts, and other cell lines,⁹ activation of polymorphonuclear neutrophils¹⁰ and osteoclasts,¹¹ and induction of interleukin-1, prostaglandin E2 and collagenase production.^{12,13} TNF- α is currently being evaluated in treatment of certain cancers and AIDS-Related Complex.

Performance Characteristics

The cytolytic activity of TNF- α against WEHI 164 cells, has been measured in culture using a MTT Cleavage assay. The ED₅₀ is defined as the concentration of TNF- α that mediates half-maximal cytotoxicity in the presence of 1 μ g/ml actinomycin D.

Product Information

Expressed in yeast

Purity: $\geq 95\%$ by SDS-PAGE

ED₅₀: $> 1 \times 10^6$ units/mg

Identity: A 1:500 dilution of anti-TNF- α detects 0.01 μ g of TNF- α by dot blot immunoassay. A 1:500 dilution of anti-TNF- β shows no reactivity with 0.01 μ g of TNF- α .

Mass/vial: 10 μ g

Volume/vial: 1 ml

Diluent: Phosphate buffered saline

Carrier Protein: 0.1% BSA

Sterility: Corresponds to USP guidelines

Endotoxin: < 10 EU/ml by LAL test.

Reagents

The contents of the vial may be diluted further using a solution that contains 0.1 - 1% BSA or 1-10% serum in buffered saline or tissue culture medium. Suggested concentration range of TNF- α is 0.1-10 ng/ml. 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

Vial should be stored at -20 °C. Prolonged storage or repeated freezing and thawing of product is not recommended and will result in decreased biological activity. Aliquots of TNF- α diluted no more than 10-fold may be stored at -20 °C.

References

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PCS/KMR 06/02

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