TUMOR NECROSIS FACTOR-ALPHA (TNF-α)
Human, Recombinant

Product No. **T152**

ProductInformation

Product Description
Tumor Necrosis Factor-Alpha (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 kD band with SDS-PAGE under non-reducing conditions.[3] TNF-α is closely related to the 25 kD protein Tumor Necrosis Factor-Beta (lymphotoxin), sharing the same receptors and cellular actions.[4] TNF-α causes cytolysis or cytostasis 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 neutrophils[10] and osteoclasts,[11] and inducting of interleukin-1, prostaglandin E_2 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 L929 cells, a TNF-α sensitive mouse fibrosarcoma line, has been measured in culture using a modification of the method from Matthews, et al.[14] The EC_{50} is defined as the effective concentration of growth factor that elicits 50% inhibition of cell growth in a cell-based bioassay.

Product Information
Expressed in *E. coli*
Molecular Weight: 17 kD
Purity: ≥97% as determined by SDS-PAGE
EC_{50}: 0.01 - 20 ng/ml
Package size: 10 µg

Formulation: Lyophilized from a 0.2 µm-filtered solution of phosphate buffered saline (PBS), pH 7.4
Carrier Protein: None
Sterility: 0.2 µm filtered, aseptic fill
Endotoxin: ≤ 2 EU/µg TNF-α

Reconstitution and Use
Reconstitute the contents of the vial using distilled water to 100 µg/ml. Dilute further in 0.2 µm--filtered PBS containing 0.1 - 1% BSA to a working stock solution of no less than 5-10 µg/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
Prior to reconstitution, store at −20°C. After reconstitution, store a 2-8°C for no more than 3 months. For extended storage, freeze in working aliquots at −70°C or −20°C. Repeated freezing and thawing is not recommended.

References

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