Tumor Necrosis Factor-α
Rat, Recombinant
Expressed in E. coli

Product Number T 5944

Product Description
Recombinant Rat Tumor Necrosis Factor-α (TNF-α) is produced from a DNA sequence encoding soluble rat TNF-α. Recombinant rat TNF-α is a soluble 17.3 kDa protein containing 157 amino acid residues.

Tumor Necrosis Factor-α is a protein secreted by lipopolysaccharide-stimulated macrophages that causes killing of diverse types of tumor cells. Also known as cachectin, TNF-α is believed to mediate pathogenic shock and tissue injury associated with endotoxemia. TNF-α occurs as a secreted, soluble form and as a membrane-anchored form, both of which are biologically active. The naturally occurring form of TNF-α is glycosylated, but non-glycosylated recombinant TNF-α has comparable biological activity. Two types of receptors for TNF-α have been described and virtually all cell types studied show the presence of one or both of these receptor types. TNF-α is closely related to the 25 kDa protein Tumor Necrosis Factor-β (lymphotoxin), sharing the same receptors and cellular actions.

TNF-α influences the growth and function of both normal and neoplastic cells. TNF-α causes cytolysis or cytostasis of certain transformed cells, being synergistic with γ-interferon in its cytotoxicity. The lysis of certain tumor targets by macrophages or monocytes is mediated by this soluble cytotoxic factor. TNF-α exerts hormone-like activities on various target cells including leukocytes, endothelial cells and fibroblasts. TNF-α and IL-1 share many biological activities, including neutrophil and osteoclast activation, and increased prostaglandin and collagenase synthesis.

Reagent
Recombinant Rat Tumor Necrosis Factor-α is supplied lyophilized from 0.2 µm filtered buffered solution with carrier.

Storage/Stability
Prior to reconstitution, store at –20 °C. The lyophilized protein is stable for a few weeks at room temperature, but best stored at –20 °C. After reconstitution, freeze in working aliquots. Repeated freezing and thawing is not recommended. Do not store in “frost-free” freezer.

Preparation Instructions
Reconstitute the contents of the vial in water to a concentration of 0.1-1.0 mg/ml. This solution can then be diluted into other aqueous buffers and stored at 2-8 °C for up to 1 week. For extended use, store at –20 °C.

Product Profile
The cytolytic activity of TNF-α is measured using murine L929 cells in the presence of actinomycin D. The ED₅₀ is defined as the effective concentration of growth factor that elicits 50% inhibition of cell growth.

Purity: ≥ 98% as determined by SDS-PAGE and HPLC.

Endotoxin level is < 0.1 ng/µg as determined by the LAL (Limulus amebocyte lysate) method.

References

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