

Recombinant murine Tumor Necrosis Factor-alpha (rm TNF-alpha)

Synonyms: TNF-alpha, Tumor necrosis factor ligand superfamily member 2, TNF- α , Cachectin, DIF, TNFA, TNFSF2

Introduction: Tumor necrosis factor is a cytokine involved in systemic inflammation and is a member of a group of cytokines that all stimulate the acute phase reaction. TNF is mainly secreted by macrophages. TNF causes apoptotic cell death, cellular proliferation, differentiation, inflammation, tumorigenesis and viral replication. TNF is also involved in lipid metabolism and coagulation. TNF's primary role is in the regulation of immune cells.

Dysregulation and, in particular, overproduction of TNF have been implicated in a variety of human diseases, autoimmune diseases, insulin resistance and cancer.

Description: Recombinant murine TNF-alpha produced in *S. Lividans* is a single, glycosylated, polypeptide chain containing 156 amino acids and having a molecular mass of 17301.32 Dalton. The rm TNF-alpha is purified by standard chromatographic techniques.

Source: *Streptomyces Lividans*

Physical Appearance: Sterile Filtered white lyophilized(freeze dried) powder.

Formulation: Each mg contains 50mM Tris-HCL pH-8 and 20mM NaCl

Solubility: It is recommended to reconstitute the lyophilized rm TNF-alpha in sterile H₂O not less than 100 μ g/ml, which can then be further diluted to other aqueous solutions.

Stability: Lyophilized rm TNF-alpha although stable at room temperature for 3 weeks, should be stored desiccated below -18°C. Upon reconstitution rm TNF-alpha should be stored at 4°C between 2-7 days and for future use below -18°C. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA). Please prevent freeze-thaw cycles.

Purity: Greater than 98.0% as determined by:

(a) Analysis by RP-HPLC.

(b) Analysis by SDS-PAGE .

Amino acid Sequence: The sequence of the first five N-terminal amino acids was determined and was found to be Met-Leu-Arg-Ser-Ser.

Biological Activity: The ED₅₀ as determined by the cytotoxicity of murine L929 cells in the presence of Actinomycin D is < 0.05 ng/ml, corresponding to a Specific Activity of 2 x 10⁷ IU/mg.

Protein content: Protein quantitation was carried out by two independent methods:

1. UV spectroscopy at 280 nm using the absorbency value of 1.24 as the extinction coefficient for a 0.1% (1 mg/ml) solution. This value is calculated by the PC GENE

computer analysis program of protein sequences (IntelliGenetics).

2. Analysis by RP-HPLC, using a calibrated solution of TNF-alpha as a Reference Standard.

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<i>small</i>	5 μ g	Cat.N°	12345010
<i>medium</i>	20 μ g	Cat.N°	12345014

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