

## BACKGROUND

Tumor Necrosis Factor alpha (TNF- $\alpha$ ) is an inflammatory cytokine secreted by macrophages, monocytes, neutrophils, T-cells, NK-cells following their stimulation by bacterial LPS. TNF- $\alpha$  activates signals through two receptors, TNF-R1, which is expressed on most cell types, and TNF-R2, which is expressed mainly on immune cells. TNF- $\alpha$  can have many functions including, to stimulate of phagocytosis in macrophages, to chemoattract neutrophils, to increase insulin resistance and to induce fever.

Recombinant rat TNF- $\alpha$  is a non-glycosylated protein, containing 157 amino acids and having a molecular mass of 17.3 kDa.

### Alternative Names:

TNFSF2, Cachectin, DIF, Necrosin, Cytotoxin, Cachexin, TNF

### Amino Acid Sequence:

MLRSSQNSS DKPVVHVAN HQAEEQLEWL SQRANALLAN  
GMDLKDNLV VPADGLYLIY SQVLFKGGQC PDYVLLTHTV  
SRFATSYQEK VLLSAIKSP CPKDTPEGAE LKPWYEPMYL  
GGVSQLKGD LLSAEVNLPK YLDITESGQV YFGVIAL

## TECHNICAL INFORMATION

**Source:** *E.coli*

### Physical Appearance:

Sterile Filtered white lyophilized (freeze-dried) powder.

### Formulation:

Recombinant rat TNF- $\alpha$  is lyophilized from 5 mM Na<sub>2</sub>PO<sub>4</sub>, pH 7.5 + 50 mM NaCl.

### Stability:

Lyophilized product is very stable at -20°C. Reconstituted material should be aliquoted and frozen at -20°C. It is recommended that a carrier protein (0.1% HSA or BSA) is added for long term storage.

### Reconstitution:

Centrifuge vial before opening. When reconstituting the product, gently pipet and wash down the sides of the vial to ensure full recovery of the protein into solution. It is recommended to reconstitute the lyophilized product with sterile water at a concentration of 0.1 mg/ml, which can be further diluted into other aqueous solutions.

### Protein Content and Purity determined by:

- UV spectroscopy at 280 nm
- RP-HPLC calibrated against a known standard
- Quantitation against a known standard via reducing and non-reducing SDS-PAGE gels.

### Endotoxin Level:

Endotoxin level, as measured by LAL analysis, is <0.01ng/ug or <0.1EU/ug.

### Biological Activity:

The activity is determined by the cytolysis of mouse L929 cells in the presence of Actinomycin D and is less than 0.05 ng/mL.

Products are for research use only. They are not intended for human, animal, or diagnostic applications.

