



## **Background**

TNF-alpha is a homotrimer with a subunit molecular mass of 17 kDa and that it plays a major role in growth regulation, differentiation, inflammation, viral replication, tumorigenesis, and autoimmune diseases; and in viral, bacterial, fungal, and parasitic infections. Besides inducing hemorrhagic necrosis of tumors, TNF was found to be involved in tumorigenesis, tumor metastasis, viral replication, septic shock, fever, inflammation, and autoimmune diseases including Crohn's disease, and rheumatoid arthritis as well as graft-versus-host disease.

## **Description**

Tumor necrosis factor alpha-1a or TNFalpha-1a is a non-glycosylated cytokine produced from E. coli using rDNA technology. The protein consists of three identical polypeptide chains of 158 amino acids combined to form a compact, bell-shaped homotrimer. The individual subunits have a relative molecular mass each of 17,484 Daltons. TNF alpha-1a is a potent lymphoid factor that exerts cytotoxic effects on a wide range of tumor cells and certain other target cells.

## **Quality Control**

### **Biological Activity:**

The ED50 as determined by the cytolysis of murine L929 cells in the presence of Actinomycin D is less than 0.03ng/ml, corresponding to a Specific Activity of  $3.0 \times 10^7$  IU/mg.

### **Purity:**

Greater than 95% as determined by SEC-HPLC

Greater than 95% as determined by reducing SDS-PAGE.

### **Amino Acid Sequence:**

The sequence of the first fifteen N-terminal amino acids was determined and was found to be Met-Val-Arg-Ser-Ser-Ser-Arg-Thr-Pro-Ser-Asp-Lys-Pro-Val- Ala

**Endotoxin:** Less than 0.1 ng/ $\mu$ g (1 IEU/ $\mu$ g)

## **Formulation**

Novoprotein recombinant TNF-alpha/TNFSF1A is lyophilized from a 0.2 $\mu$ m filtered solution of 20mM PB,150mM NaCl,pH7.0.

## **Storage**

Lyophilized TNF-alpha/TNFSF1A should be stored at less than -20°C, though stable at room temperature for 3 weeks.

Reconstitute protein solution can be stored at 4-7°C for 2-7 days.

Aliquots of reconstituted samples are stable at less than -20°C for 3 months.

## **Reconstitution**

It is recommended to reconstitute the lyophilized Recombinant Human Tumor Necrosis Factor alpha(TNFa) in PBS not less than 100 $\mu$ g/ml, which can then be further diluted to other aqueous solutions.

**NOTE:** Please avoid freeze-thaw cycles.

\* For research use ONLY!