

## TNF- $\alpha$ (mutant), Human

**Cat. No.:** Z00404-1

**Size:** 1.0 mg

**Synonyms:** Tumor Necrosis Factor alpha (TNF)- $\alpha$  (mutant), human; TNF-alpha mutant, human

### Description:

TNF is secreted by macrophages, monocytes, neutrophils, T-cells, NK-cells following their stimulation by bacterial LPS. Cells expressing CD4 secrete TNF-alpha while CD8 cells secrete little or no TNF-alpha. The synthesis of TNF-alpha is induced by many different stimuli including interferons, IL2, GM-CSF. <BR>The clinical use of the potent anti-tumor activity of TNF-alpha has been limited by the proinflammatory side effects including fever, dose-limiting hypotension, hepatotoxicity, intravascular thrombosis, and hemorrhage. Designing clinically applicable TNF-a mutants with low systemic toxicity has been an intense pharmacological interest. Human TNF-a, which binds to the murine TNF-R55 but not to the mouse TNF-R75, exhibits retained anti-tumor activity and reduced systemic toxicity in mice compared with murine TNF-a, which binds to both murine TNF receptors. Based on these results, many TNF-a mutants that selectively bind to TNF-R55 have been designed. These mutants displayed cytotoxic activities on tumor cell lines in vitro, and exhibited lower systemic toxicity in vivo. Recombinant Human TNF-alpha Variant/Mutant compared with the wild-type, has an amino acid sequence deletion from a.a. 1-7, and the following a.a. substitutes Arg8, Lys9, Arg10 and Phe157 which is proven to have more activity and with less inflammatory side effect in vivo. Recombinant Human TNF-alpha Mutant produced in *E. coli* is a single, non-glycosylated, polypeptide chain containing 151 amino acids and having a molecular

mass of 16,886 Da.

**Source:** *E. coli*

**Species:** Human

**Biological Activity:** The ED50 as determined by the cytotoxicity of murine L929 cells in the presence of Actinomycin D is less than 0.01 ng/ml, corresponding to a Specific Activity of  $1.0 \times 10^8$  IU/mg.

**Molecular Weight:** 16,886 Da

**Sequence Analysis:** The sequence of the first five N-terminal amino acids was determined and was found to be Met-Arg-Lys-Arg-Lys.

**Formulation:** Lyophilized from a 0.2  $\mu$ m filtered solution in PBS

**Reconstitution:** It is recommended to reconstitute the lyophilized rHuTNF-alpha mutant in sterile 18 M $\Omega$ -cm H<sub>2</sub>O not less than 100  $\mu$ g/ml, which can then be further diluted to other aqueous solutions.

**Purity:** Greater than 95.0% as determined by:

- (a) Analysis by RP-HPLC.
- (b) Anion-exchange FPLC.
- (c) Analysis by reducing and non-reducing SDS-PAGE Silver Stained gel.

**Endotoxin Level:** Less than 0.01 ng/ $\mu$ g (0.1 EU/ $\mu$ g) determined by LAL test

**Storage:** Lyophilized samples are stable for up to twelve months from date of receipt at -20°C to -70°C. Please avoid repeated freeze-thaw cycles.