

TNF- α (mutant), Human

Cat. No.: Z00404-50

Size: 50.0 ug

Synonyms: Tumor Necrosis Factor alpha (TNF)- α (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.
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 cytolysis of murine L929 cells in the presence of Actinomycin D is less than 0.01 ng/ml, corresponding to a Specific Activity of 1.0×10^8 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 μ m filtered solution in PBS

Reconstitution: It is recommended to reconstitute the lyophilized rHuTNF-alpha mutant in sterile 18 M Ω -cm H₂O not less than 100 μ 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/ μ g (0.1 EU/ μ 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.