TNF-alpha M, human
Recombinant Human Tumor Necrosis Factor-alpha Mutant/Variant

Instruction Manual

Catalog Number
C-63723

Description
TNF is secreted by macrophages, monocytes, neutrophils, T-cells, NK-cells following their stimulation by bacterial LPS. The synthesis of TNF-α is induced by many different stimuli including interferons, IL2 and GM-CSF. It is a potent lymphoid factor which exerts cytotoxic effects on a wide range of tumor cells and certain other target cells. The clinical use of the potent anti-tumor activity of TNF-α has been limited by the proinflammatory side effects including fever, dose-limiting hypotension, hepatotoxicity, intravascular thrombosis and hemorrhage. Thus, designing clinically applicable TNF-α mutants with low systemic toxicity has been of great pharmacological interest. Human TNF-α, which only binds to the murine TNF-R55, exhibits retained anti-tumor activity and reduced systemic toxicity in mice compared with the murine TNF-α. Based on these results, many TNF-α 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. Compared with the wild-type, recombinant human TNF-alpha Variant/Mutant has an amino acid sequence deletion from a.a. 1-7, and the following a.a. substitutes Arg8, Lys9, Arg10 and Phe157. It is proven to have more activity and less inflammatory side effects in vivo. Recombinant Human TNF-α Variant produced in E. coli is a single, non-glycosylated polypeptide chain of 151 amino acids and a molecular mass of 16598 Dalton.

Quantity
50 µg

Molecular Mass
16.5 kDa

Source
E. coli

Biological-Activity
Human TNF-alpha M Variant is fully biologically active when compared to the wild type. The ED50, as determined by the cytolysis of murine L929 cells in the presence of Actinomycin D, is <0.05ng/ml corresponding to a specific activity of ≥ 2 x 10⁷ units/mg.

Specific Activity
≥ 2 x 10⁷ IU/mg

Formulation
White, lyophilized (freeze-dried) powder. The protein was lyophilized from a sterile-filtered protein solution after extensive dialysis against 0.5x PBS (pH 7).

Reconstitution
Please Note: Always centrifuge product briefly before opening the vial. The lyophilized rHu TNF-alpha M should be reconstituted in sterile, ultra-pure water to a concentration of 0.1 - 1.0 mg/ml. This solution can then be diluted into other aqueous buffers and stored at -20°C for future use.

Purity
Greater than 95% (determined by SDS-PAGE and RP-HPLC analysis).

Endotoxin Level
< 0.1 ng per µg of TNF-alpha M (1EU/µg).

Storage
The lyophilized protein, though stable at room temperature for up to 3 weeks, is best stored desiccated at -20°C. Reconstituted rHu TNF-alpha M should be used immediately or stored long-term in undiluted working aliquots at -20°C. For long-term storage it is recommended to add a carrier protein (0.1% endotoxin-free HSA or BSA; e.g. Cat.No. C-69500A). Avoid repeated freeze-thaw cycles.

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