

Recombinant Human Mutant Tumor Necrosis Factor Alpha

Cat. No. TNF-25H **Lot. No.** (See product label)

SPECIFICATION

Product Overview

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 Dalton.

Species

Human

Source

E.coli

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

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	many different stimuli including interferons, IL2, GM-CSF.
Purity	>95% as determined by SEC-HPLC and SDS-PAGE .
Formulation	Lyophilized from a 0.2 µ filtered solution in PBS.
Specific 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 x 10 ⁸ IU/mg.
Endotoxin	Less than 0.01ng/g (0.01IEU/g) determined by LAL test.
Reconstitution	It is recommended to reconstitute the lyophilized TNF-alpha Mutant in sterile 18MΩ-cm H ₂ O not less than 100µg/ml, which can then be further diluted to other aqueous solutions.
Storage	Lyophilized samples are stable for up to twelve months from date of receipt at -20°C to -70°C. Aliquot to avoid repeated freeze-thaw cycles.

GENE INFORMATION

Gene Name	TNF
Synonyms	tumor necrosis factor (TNF superfamily, member 2); DIF; TNFA; TNFSF2; TNF-alpha; Cachectin; OTTHUMP00000037669; TNF-a; APC1 protein; TNF superfamily, member 2; TNF, macrophage-derived; TNF, monocyte-derived; Tumor necrosis factor ligand superfamily member 2; Tumor necrosis factor precursor; tumor necrosis factor; tumor necrosis factor (cachectin); tumor necrosis factor alpha; tumor necrosis factor, alpha (cachectin); TNF
Gene ID	7124

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mRNA Refseq	NM_000594.2
Protein Refseq	NP_000585.2
MIM	191160
UniProt ID	P01375
Chromosome Location	6p21.3
Function	Cytokine activity, Identical protein binding, Tumor necrosis factor receptor binding

**PDBrendering based
on 1TNF.**

