

# Recombinant Human TNF protein

**Cat. No.** TNF-38H    **Lot. No.** (See product label)

## SPECIFICATION

**Product Overview**

Recombinant Human TNF protein (variant) was expressed in Escherichia coli. Compared with wild type, this variant has an amino acid sequence (a.a.) 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.

**Species** Human

**Source** E.coli

**ProteinLength** 151

**Description**

The clinical use of the potent antitumor 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- $\alpha$  mutants with low systemic toxicity has been an intense pharmacological interest. Human TNF- $\alpha$ , which binds to the murine TNF-R55 but not to the murine TNF-R75, exhibits retained antitumor activity and reduced systemic toxicity in mice compared with murine TNF- $\alpha$ , which binds to both murine TNF receptors. Based on these results, many TNF- $\alpha$  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.

**Form** Lyophilized from a 0.2 $\mu$ m filtered concentrated solution in PBS, pH 7.0.

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<b>Bio-activity</b>	Fully biologically active when compared to standard. The ED50 as determined by a cytotoxicity assay using murine L929 cells is less than 0.01 ng/ml, corresponding to a specific activity of $> 1.0 \times 10^7$ IU/mg in the presence of actinomycin D.
<b>Molecular Mass</b>	Approximately 16.9 kDa, a single non-glycosylated polypeptide chain containing 151 amino acids. Compared with the wild-type, rHuTNF- $\alpha$ Variant has an amino acid sequence (a.a.) 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.
<b>AA Sequence</b>	MRKRKPVAHVVANPQAEGLQWLNRRANALLANGVELRDNQLVVPSEGLYLIYSQ VLFKGQGCPSTHLLTHTISRIVSYQTKVNLLSAIKSPCQRETPEGAEAKPWYEPIY LGGVFQLEKGDRLSAEINRPDYLDFAESGQVYFGIIAF
<b>Endotoxin</b>	Less than 1 EU/ $\mu$ g of rHu TNF- $\alpha$ /TNFSF2, Variant as determined by LAL method.
<b>Purity</b>	>98% by SDS-PAGE and HPLC analysis.
<b>Storage</b>	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. 12 months from date of receipt, -20 to -70 centigrade as supplied. 1 month, 2 to 8 centigrade under sterile conditions after reconstitution. 3 months, -20 to -70 centigrade under sterile conditions after reconstitution.
<b>Reconstitution</b>	We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Reconstitute in sterile distilled water or aqueous buffer containing 0.1 % BSA to a concentration of 0.1-1.0 mg/mL. Stock solutions should be apportioned into working aliquots and stored at $\leq -20$ centigrade. Further dilutions should be made in appropriate buffered solutions.

## GENE INFORMATION

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<b>Gene Name</b>	TNF
<b>Official Symbol</b>	TNF
<b>Synonyms</b>	TNF; tumor necrosis factor; TNFA, tumor necrosis factor (TNF superfamily, member 2); DIF; TNF superfamily; member 2; TNF alpha; TNFSF2; TNF-a; cachectin; APC1 protein; TNF, monocyte-derived; TNF, macrophage-derived; TNF superfamily, member 2; tumor necrosis factor alpha; tumor necrosis factor-alpha; tumor necrosis factor ligand superfamily member 2; TNFA; TNF-alpha;
<b>Gene ID</b>	7124
<b>mRNA Refseq</b>	NM_000594
<b>Protein Refseq</b>	NP_000585
<b>MIM</b>	191160
<b>UniProt ID</b>	P01375

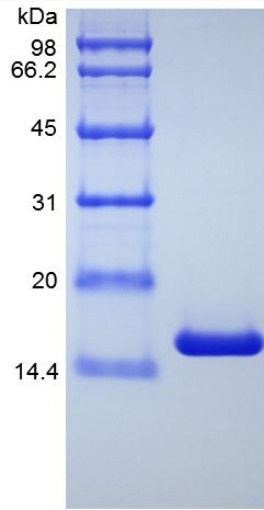
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**SDS-PAGE of TNF-38H**



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