

## Recombinant Human TNF-alpha/TNFA Protein High Active Mutant Protein

Catalog No. PKSH033167

**Note:** Centrifuge before opening to ensure complete recovery of vial contents.

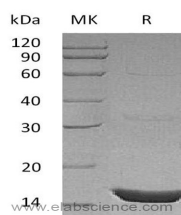
### Description

<b>Synonyms</b>	Tumor Necrosis Factor; Cachectin; TNF-Alpha; Tumor Necrosis Factor Ligand Superfamily Member 2; TNF-a; TNF; TNFA; TNFSF2
<b>Species</b>	Human
<b>Expression Host</b>	E.coli
<b>Accession</b>	P01375
<b>Calculated Molecular Weight</b>	16.9 kDa
<b>Observed molecular weight</b>	15-17 kDa
<b>Bioactivity</b>	Measured in a cytotoxicity assay using L-929 mouse fibroblast cells in the presence of the metabolic inhibitor actinomycin D. The ED50 for this effect is 1.48 pg/ml.

### Properties

<b>Purity</b>	> 95 % as determined by reducing SDS-PAGE.
<b>Storage</b>	Lyophilized proteins are stable for up to 12 months when stored at -20 to -80°C. Reconstituted protein solution can be stored at 4-8°C for 2-7 days. Aliquots of reconstituted samples are stable at < -20°C for 3 months.
<b>Shipping</b>	This product is provided as lyophilized powder which is shipped with ice packs.
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution of 20mM PB, 150mM NaCl, pH 7.4.
<b>Reconstitution</b>	Please refer to the printed manual for detailed information.

### Data



### Background

Tumor Necrosis Factor- $\alpha$  (TNF- $\alpha$ ) is secreted by macrophages, monocytes, neutrophils, T-cells, and NK-cells following stimulation by bacterial LPS. Cells expressing CD4 secrete TNF- $\alpha$  while cells that express CD8 secrete little or no TNF- $\alpha$ . Synthesis of TNF- $\alpha$  can be induced by many different stimuli including interferons, IL2, and GM-CSF. The clinical use of the potent anti-tumor activity of TNF- $\alpha$  has been limited by the proinflammatory side effects such as fever, dose-limiting hypotension, hepatotoxicity, intravascular thrombosis, and hemorrhage. Designing clinically applicable TNF- $\alpha$  mutants with low systemic toxicity has been of intense pharmacological interest. Human TNF- $\alpha$  that binds to murine TNF-R55 but not murine TNF-R7, exhibits retained anti-tumor activity and reduced systemic toxicity in mice compared with

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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 have exhibited lower systemic toxicity in vivo. Recombinant Human TNF- $\alpha$  High Active Mutant differs from the wild-type by amino acid substitution of amino acids 1-7 with Arg8, Lys9, Arg10 and Phe157. This mutant form has been shown to have increased activity with less inflammatory side effects in vivo.

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