## Recombinant Human TNF-alpha/TNFA Protein (His Tag)

## Catalog Number: PKSH033164

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

Description	
Species	Human
Source	E.coli-derived Human TNF-alpha/TNFA protein Val 77-Leu 233, with an C-terminal His
Calculated MW	18.3 kDa
Observed MW	17 kDa
Accession	P01375
Bio-activity	Measure by its ability to induce cytotoxicity in L929 cells in the presence of
	actinomycin D. The $ED_{50}$ for this effect is < 0.1 ng/mL. The specific activity of
	recombinant human TNF alpha is approximately $\geq 1 \ge 1 \ge 10^7$ IU/mg.
Properties	
Purity	>97% as determined by reducing SDS-PAGE.
Endotoxin	< 0.1 EU per µg of the protein as determined by the LAL method.
Storage	Generally, 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 $< -20^{\circ}$ C for 3 months.
Shipping	This product is provided as lyophilized powder which is shipped with ice packs.
Formulation	Lyophilized from sterile PBS,pH 8.0.
	Normally 5% - 8% trehalose, mannitol and 0.01% Tween 80 are added as protectants
	before lyophilization.
	Please refer to the specific buffer information in the printed manual.
Reconstitution	Please refer to the printed manual for detailed information.

## Data



> 97 % as determined by reducing SDS-PAGE.

Background

## **Elabscience**®

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 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 subsitution 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.