

# Recombinant Human TNF $\alpha$ protein (Avi, His Tag)

Catalog Number: PDEH100866



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

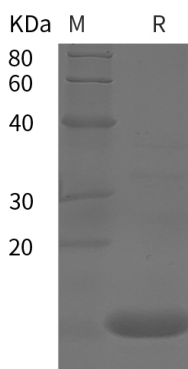
## Description

<b>Species</b>	Human
<b>Mol_Mass</b>	9.8 kDa
<b>Accession</b>	P01375
<b>Bio-activity</b>	Not validated for activity

## Properties

<b>Purity</b>	> 95% as determined by reducing SDS-PAGE.
<b>Endotoxin</b>	< 10 EU/mg of the protein as determined by the LAL method
<b>Storage</b>	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°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 $\mu$ m filtered solution in PBS with 5% Trehalose and 5% Mannitol.
<b>Reconstitution</b>	It is recommended that sterile water be added to the vial to prepare a stock solution of 0.5 mg/mL. Concentration is measured by UV-Vis.

## Data



> 95 % as determined by reducing SDS-PAGE.

## 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 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.

## For Research Use Only

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Rev. V1.2