

## Recombinant Human TNF $\alpha$ Protein

Size / Cat.No.: 100 $\mu$ g / GMP-TL303-0100

### Product Name

Generic Name	Recombinant Human TNF $\alpha$ Protein
Synonym	DIF, TNF-alpha, TNFA, TNFSF2, cachexin, cachectin, TNF- $\alpha$

### Product Information

Protein sequence	A DNA sequence encoding the human TNF- $\alpha$ (GenBank: ADV31546.2 V77-L233) was expressed with a polyhistidine tag at the C- terminus.
Expression Host	HEK293 cells
QC Testing Purity	> 90% as determined by SDS-PAGE.
Activity	Measured in a cytotoxicity assay using L-929 mouse fibroblast cells in the presence of actinomycin D. The ED <sub>50</sub> for this effect is $\leq$ 5 ng/mL.
Endotoxin	< 0.1EU per $\mu$ g of the protein as determined by the LAL method.
Molecular Mass	The Recombinant protein predicts a molecular mass of 18.2kDa.
Formulation	Lyophilized from sterile PBS, pH 7.4. Normally 6 % mannitol are added as protectants before lyophilization.
Stability & Storage	24 months at 2°C to 8°C in lyophilized state. 6 months at -20°C under sterile conditions after reconstitution. 12 months at -80°C under sterile conditions after reconstitution. Recommend to aliquot the protein into smaller quantities after reconstituting with water for injection, normal saline or PBS, and keep the diluted concentration above 100 $\mu$ g/mL. Avoid repeated freeze-thaw cycles.

### Background

TNF- $\alpha$  is a pleiotropic pro-inflammatory cytokine secreted by various cells, including adipocytes, activated monocytes, macrophages, B cells, T cells and fibroblasts. It belongs to the TNF family of ligands, and signals through two receptors, TNFR1 and TNFR2. TNF- $\alpha$  is cytotoxic to a wide variety of tumor cells, and is an essential factor in mediating the immune response against bacterial infections. TNF- $\alpha$  also plays a role in the induction of septic shock, autoimmune diseases, rheumatoid arthritis, inflammation, and diabetes. TNF- $\alpha$  is produced mainly by macrophages, and large amounts of this cytokine are released in response to lipopolysaccharide, other bacterial products, and Interleukin-1 (IL-1). TNF- $\alpha$  is involved in fighting against tumorigenesis. It is regarded as a potential protein of cancer treatment.

## References

1. Hector J, *et al.* (2007) TNF- $\alpha$  alters visfatin and adiponectin levels in human fat. *Horm Metab Res.* 39(4): 250-5.
2. Berthold-Losleben M, *et al.* (2008) The TNF- $\alpha$  System: Functional Aspects in Depression, Narcolepsy and Psychopharmacology. *Curr Neuropharmacol.* 6(3): 193-202.
3. Zelová H, Hošek J (2013) TNF-alpha signalling and inflammation: interactions between old acquaintances. *Inflamm Res* 62: 641–651