

## TNF alpha Protein, Human, Recombinant (His & Avi)

### General Information

Synonyms:	TNF $\alpha$ ;APC1 protein;TNFSF2;TNF;TNF $\alpha$ ;TNF-alpha;TNF- $\alpha$ ;TNFSF1A;TNFATNF;TNFalpha; Cachectin;DIF;TNFA
Protein Construction:	Val77-Leu233
Species:	Human
Expression Host:	HEK293 Cells
Accession:	P01375
Molecular Weight:	20.3 kDa (predicted). Due to glycosylation, the protein migrates to 21-25 kDa based on Tris-Bis PAGE result.

### QC Testing

Biological Activity:	1. Immobilized Human TNF alpha, His Tag at 5 $\mu$ g/ml (100 $\mu$ l/well) on the plate. Dose response curve for Human TNFR2, mFc Tag with the EC50 of 61.0ng/ml determined by ELISA. 2. Human TNF alpha, His Tag captured on CM5 Chip via anti-his antibody can bind Human TNFR2, mFc Tag with an affinity constant of 1.62 nM as determined in SPR assay.
Purity:	> 95% as determined by Tris-Bis PAGE; > 95% as determined by HPLC
Endotoxin:	< 1.0 EU/ $\mu$ g of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 $\mu$ m filter, containing PBS (pH 7.4). Typically, 8% trehalose is incorporated as a protective agent before lyophilization.

### Preparation and Storage

#### Reconstitution:

Reconstitute the lyophilized protein in distilled water. The product concentration should not be less than 100  $\mu$ g/ml. Before opening, centrifuge the tube to collect powder at the bottom. After adding the reconstitution buffer, avoid vortexing or pipetting for mixing.

#### Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

#### Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

### Protein Background

Tumor necrosis factor alpha (TNF-alpha), also known as cachectin and TNFSF2, is the prototypic ligand of the TNF superfamily. It is a pleiotropic molecule that plays a central role in inflammation, immune system development,

apoptosis, and lipid metabolism. Cytokine that binds to TNFRSF1A/TNFR1 and TNFRSF1B/TNFR. It is mainly secreted by macrophages and can induce cell death of certain tumor cell lines. It is a potent pyrogen causing fever by direct action or by stimulation of interleukin-1 secretion and is implicated in the induction of cachexia. Under certain conditions it can stimulate cell proliferation and induce cell differentiation.

### Reference

Danese S, et al. Review article: the role of anti-TNF in the management of ulcerative colitis - past, present and future[J]. *Alimentary Pharmacology & Therapeutics*, 2013, 37(9):855-866.

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