

## TNF alpha Trimer Protein, Human, Recombinant

## General Information

Synonyms:	TNFATNF;TNF- $\alpha$ ;TNFSF-2;APC1 protein;Cachectin;Tumor Necrosis Factor Ligand Superfamily Member 2;TNFA;TNFSF2;TNF $\alpha$ ;TNFSF1A;TNFalpha;TNFSF 2;TNF- $\alpha$ ;TNF-alpha;tumor necrosis factor;Tumor Necrosis Factor;DIF;TNF $\alpha$ ;TNF;TNF-Alpha
Protein Construction:	Val77-Leu233
Species:	Human
Expression Host:	HEK293 Cells
Accession:	P01375
Molecular Weight:	17.35 kDa (Predicted); 18-22 kDa (Reducing condition, due to glycosylation)

## QC Testing

Biological Activity:	Immobilized Human TNF alpha, No Tag at 1 $\mu$ g/ml (100 $\mu$ l/well) on the plate. Dose response curve for Human TNFR1, hFc Tag with the EC50 of 2.7 ng/ml determined by ELISA (QC Test).  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 25-100 pg/mL (QC Test).
Purity:	> 95% as determined by Bis-Tris PAGE; > 95% as determined by HPLC
Endotoxin:	< 0.1 EU/ $\mu$ g of the protein as determined by the LAL method.
Formulation:	Lyophilized from 0.22 $\mu$ m filtered solution in PBS (pH 7.4). Normally 8% trehalose is added as protectant 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. <small>Actual storage temperature shall be subject to the COA.</small>
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,

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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.

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