

## TNF alpha Protein, Human, Recombinant, Biotinylated

## General Information

Synonyms:	TNFSF2;DIF;TNF- $\alpha$ ;tumor necrosis factor;TNF-alpha;TNFA
Protein Construction:	A DNA sequence encoding the human TNF (NP_000585.2) (Val77-Leu233) was expressed with an initial Met at the N-terminus. The purified protein was biotinylated in vitro. Predicted N terminal: Met
Species:	Human
Expression Host:	E. coli
Accession:	P01375
Molecular Weight:	17.5 kDa (predicted)

## QC Testing

Biological Activity:	1.Anti-TNF $\alpha$ (Adalimumab Biosimilar) captured on Protein A chip can bind Amine-Labeled Biotinylated Recombinant Human TNF-alpha Protein (Cat#TMPY-05237) with an affinity constant of 0.7767 nM as determined in an SPR assay (Biacore T200) (Routinely tested). 2. Immobilized Anti-TNF $\alpha$ (Adalimumab Biosimilar) at 5 $\mu$ g/mL (100 $\mu$ L/well) can bind Recombinant Human TNF-alpha/TNFA Protein, Biotinylated (Cat#TMPY-05237), the EC50 is 1.3-3.9 ng/mL (Routinely tested). 3. Immobilized Anti-TNF $\alpha$ (Infliximab Biosimilar) at 5 $\mu$ g/mL (100 $\mu$ L/well) can bind Recombinant Human TNF-alpha/TNFA Protein, Biotinylated (Cat#TMPY-05237), the EC50 is 0.1-1.5 ng/mL (Routinely tested). 4. Immobilized Anti-TNF $\alpha$ (Golimumab Biosimilar) at 5 $\mu$ g/mL (100 $\mu$ L/well) can bind Recombinant Human TNF-alpha/TNFA Protein, Biotinylated (Cat#TMPY-05237), the EC50 is 0.1-1.0 ng/mL (Routinely tested). 5. Immobilized Recombinant Human TNFRSF1A Protein (Fc Tag) at 5 $\mu$ g/mL (100 $\mu$ L/well) can bind Recombinant Human TNF-alpha/TNFA Protein, Biotinylated (Cat#TMPY-05237), the EC50 is 3.9-11.7 ng/mL (QC tested). 6. Immobilized Recombinant Human TNFR2/CD120b/TNFRSF1B Protein (His & Fc Tag) (Cat#TMPY-00934) at 5 $\mu$ g/mL (100 $\mu$ L/well) can bind Recombinant Human TNF-alpha/TNFA Protein, Biotinylated (Cat#TMPY-05237), the EC50 is 2.6-8 ng/mL (Routinely tested).
Purity:	> 90 % as determined by SDS-PAGE.
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 Sterile PBS. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

## Preparation and Storage

Reconstitution:	A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.
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.

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### Protein Background

Tumor necrosis factor alpha (TNF-alpha), also known as TNF, TNFA or TNFSF2, is the prototypic cytokine of the TNF superfamily, and is a multifunctional molecule involved in the regulation of a wide spectrum of biological processes including cell proliferation, differentiation, apoptosis, lipid metabolism, and coagulation. Two receptors, TNF-R1 (TNF receptor type 1; CD120a; p55/60) and TNF-R2 (TNF receptor type 2; CD120b; p75/80), bind to TNF-alpha. TNF-alpha protein 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 the tumorigenesis, thus, is regarded as a molecular insight in cancer treatment. TNF-alpha Protein & Antibody Cancer Immunotherapy Immune Checkpoint Immunotherapy Targeted Therapy

### Reference

Hector J, et al. (2007) TNF-alpha alters visfatin and adiponectin levels in human fat. *Horm Metab Res.* 39(4): 250-5.  
Berthold-Losleben M, et al. (2008) The TNF-alpha System: Functional Aspects in Depression, Narcolepsy and Psychopharmacology. *Curr Neuropharmacol.* 6(3): 193-202.

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