

# Human TNF-beta / TNFSF1 / Lymphotoxin alpha Protein

Catalog Number: 10270-HNAE



Sino Biological  
Biological Solution Specialist

## General Information

### Gene Name Synonym:

LT; TNFB; TNFSF1

### Protein Construction:

A DNA sequence encoding the mature form of human TNF $\beta$  (P01374) (Leu 35-Leu 205) was expressed and purified, with an initial Met at the N-terminus.

**Source:** Human

**Expression Host:** E. coli

## QC Testing

**Purity:** > 97 % as determined by SDS-PAGE

### Bio Activity:

Measured in a cytotoxicity assay using L929 mouse fibrosarcoma cells in the presence of the metabolic inhibitor actinomycin D. The ED<sub>50</sub> for this effect is typically 2-10 pg/mL.

### Endotoxin:

Please contact us for more information.

### Stability:

Samples are stable for up to twelve months from date of receipt at -70 °C

**Predicted N terminal:** Met

### Molecular Mass:

The recombinant human TNF $\beta$  comprises 172 amino acids and predicts a molecular mass of 18.8 kDa as estimated in SDS-PAGE under reducing conditions.

### Formulation:

Lyophilized from sterile 50mM Tris, pH 8.0

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

## Usage Guide

### Storage:

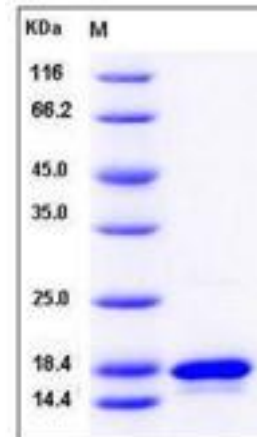
Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

**Avoid repeated freeze-thaw cycles.**

### Reconstitution:

Detailed reconstitution instructions are sent along with the products.

## SDS-PAGE:



## Protein Description

Lymphotoxin-alpha, also known as LT-alpha, TNF-beta, Tumor necrosis factor ligand superfamily member 1, LTA TNFSF1 and TNFB, is a secreted protein which belongs to the tumor necrosis factor family. TNF-beta/TNFSF1/Lymphotoxin alpha is a highly inducible, secreted, and exists as homotrimeric molecule. It is a cytokine that in its homotrimeric form binds to TNFRSF1A / TNFR1, TNFRSF1B / TNFR2 and TNFRSF14 / HVEM. In its heterotrimeric form with LTB, TNF-beta/TNFSF1/Lymphotoxin alpha binds to TNFRSF3 / LTBR. Lymphotoxin is produced by lymphocytes and cytotoxic for a wide range of tumor cells. TNF-beta/TNFSF1/Lymphotoxin alpha forms heterotrimers with lymphotoxin-beta which anchors lymphotoxin-alpha to the cell surface. It mediates a large variety of inflammatory, immunostimulatory, and antiviral responses. TNF-beta/TNFSF1/Lymphotoxin alpha is also involved in the formation of secondary lymphoid organs during development and plays a role in apoptosis. Genetic variations in TNF-beta/TNFSF1/Lymphotoxin alpha are a cause of susceptibility psoriatic arthritis which is an inflammatory, seronegative arthritis associated with psoriasis. It is a heterogeneous disorder ranging from a mild, non-destructive disease to a severe, progressive, erosive arthropathy.

## References

1. Messer G, *et al.* (1991) Polymorphic structure of the tumor necrosis factor (TNF) locus: an NcoI polymorphism in the first intron of the human TNF-beta gene correlates with a variant amino acid in position 26 and a reduced level of TNF-beta production. *J Exp Med.* 173(1): 209-19.
2. Banner DW, *et al.* (1993) Crystal structure of the soluble human 55 kd TNF receptor-human TNF beta complex: implications for TNF receptor activation. *Cell.* 73(3): 431-45.
3. Picarella DE, *et al.* (1993) Transgenic tumor necrosis factor (TNF)-alpha production in pancreatic islets leads to insulinitis, not diabetes. Distinct patterns of inflammation in TNF-alpha and TNF-beta transgenic mice. *J Immunol.* 150(9): 4136-50.

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