

Active Recombinant Human TNF Protein, Biotinylated

Cat. No. TNF-171H Lot. No. (See product label)

SPECIFICATION

Product Overview Recombinant Human TNF(Val77-Leu233) was expressed in E. coli, Biotinylated.

Species Human

Source E.coli

ProteinLength Val77-Leu233

Description

Tumor necrosis factor alpha (TNF-alpha), also known as cachectin and TNFSF1A, 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. Human TNF-alpha consists of a 35 amino acid (aa) cytoplasmic domain, a 21 aa transmembrane segment, and a 177 aa extracellular domain (ECD). Within the ECD, human TNF-alpha shares 97% aa sequence identity with rhesus and 71%-92% with bovine, canine, cotton rat, equine, feline, mouse, porcine, and rat TNF-alpha. TNF-alpha is produced by a wide variety of immune, epithelial, endothelial, and tumor cells. TNF-alpha is assembled intracellularly to form a noncovalently linked homotrimer which is expressed on the cell surface. Cell surface TNF-alpha can induce the lysis of neighboring tumor cells and virus infected cells, and it can generate its own downstream cell signaling following ligation by soluble TNFR I. Shedding of membrane bound TNF-alpha by TACE/ADAM17 releases the bioactive cytokine, a 55 kDa soluble trimer of the TNF-alpha extracellular domain. TNF-alpha binds the ubiquitous 55-60 kDa TNF RI and the hematopoietic cell-restricted 80 kDa TNF RII, both of which are also expressed as homotrimers. Both type I and type II

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receptors bind TNF-alpha with comparable affinity, although only TNF RI contains a cytoplasmic death domain which triggers the activation of apoptosis. Soluble forms of both types of receptors are released and can neutralize the biological activity of TNF-alpha.

Predicted N Terminal Val77

Form Lyophilized from a 0.2 µm filtered solution in PBS with BSA as a carrier protein.

Bio-activity Measured in a cytotoxicity assay using L-929 mouse fibroblast cells in the presence of the metabolic inhibitor actinomycin D. Matthews, N. and M.L. Neale (1987) in Lymphokines and Interferons, A Practical Approach. Clemens, M.J. et al. (eds): IRL Press. 2

Molecular Mass Predicted Molecular Mass: 17 kDa (unlabeled);
SDS-PAGE: 17 kDa, reducing conditions.

Endotoxin <0.10 EU per 1 µg of the protein by the LAL method.

Purity >95%, by SDS-PAGE with silver staining

Notes Structure / Form: Homotrimer. Biotinylated protein via amines

Storage Use a manual defrost freezer and avoid repeated freeze-thaw cycles.
12 months from date of receipt, -20 to -70 centigrade as supplied.
1 month, 2 to 8 centigrade under sterile conditions after reconstitution.
3 months, -20 to -70 centigrade under sterile

Reconstitution Reconstitute at 100 µg/mL in sterile PBS.

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Conjugation Biotin

GENE INFORMATION

Gene Name TNF tumor necrosis factor [Homo sapiens]

Official Symbol TNF

Synonyms TNF; tumor necrosis factor; TNFA, tumor necrosis factor (TNF superfamily, member 2); DIF; TNF superfamily; member 2; TNF alpha; TNFSF2; TNF-a; cachectin; APC1 protein; TNF, monocyte-derived; TNF, macrophage-derived; TNF superfamily, member 2; tumor necrosis factor alpha; tumor necrosis factor-alpha; tumor necrosis factor ligand superfamily member 2; TNFA; TNF-alpha;

Gene ID 7124

mRNA Refseq NM_000594

Protein Refseq NP_000585

MIM 191160

UniProt ID P01375

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