

Recombinant Mouse TNF-alpha, Tag Free

Information

Accession #	P06804
Alternate Names	APC1 protein; Cachectin; Cachetin; DIF; TNF; TNF, monocyte-derived; TNFA; TNF-A; TNFalpha
Source	Human embryonic kidney cell, HEK293-derived mouse TNF-alpha protein
Protein sequence	Leu80-Leu235
M.Wt	17 kDa
Appearance	Solution protein
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. 3 years from date of receipt, -20 to -70°C as supplied.
Concentration	0.2 mg/mL
Formulation	Dissolved in sterile PBS buffer.
Reconstitution	We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. This solution can be diluted into other aqueous buffers.
Biological Activity	The EC50 for this effect is 5-20 pg/mL. 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.
Shipping Condition	Shipping with dry ice.
Handling	Centrifuge the vial prior to opening.
Usage	For Research Use Only! Not to be used in humans.

Quality Control

Purity	> 95%, determined by SDS-PAGE.
Endotoxin	<0.010 EU per 1 ug of the protein by the LAL method.

Description

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 ^[1, 2].

Mouse TNF-alpha consists of a 35 amino acid (aa) cytoplasmic domain, a 21 aa transmembrane segment, and a 179 aa extracellular domain (ECD) ^[3]. Within the ECD, mouse TNF-alpha shares 94% aa sequence identity with rat and 70%-77% with bovine, canine, cotton rat, equine, feline, human, porcine, rat, and rhesus TNF-alpha. TNF-alpha is produced by a wide variety of immune, epithelial, endothelial, and tumor cells ^[1, 2]. TNF-alpha is assembled intracellularly to form a noncovalently linked homotrimer which is

expressed on the cell surface ^[4]. 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 ^[2, 5]. Shedding of membrane bound TNF-alpha by TACE/ ADAM17 releases the bioactive cytokine, a 55 kDa soluble trimer of the TNF-alpha extracellular domain ^[6-8]. TNF-alpha binds the ubiquitous 55-60 kDa TNF RI ^[9, 10] and the hematopoietic cell-restricted 80 kDa TNF RII ^[11, 12], both of which are also expressed as homotrimers ^[1, 2, 13].

Reference

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- [11]. Dembic, Z. et al. (1990) *Cytokine* 2:231.
- [12]. Smith, C.A. et al. (1990) *Science* 248:1019.
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