

TNF-alpha Rat E. coli

Product Data Sheet

Type: Recombinant	Cat. No.:	
Source: E. coli	RBG30076005	(5 µg)
Species: Rat	RBG30076020	(20 µg)
Other names: Cachectin, Tumor necrosis factor alpha, DIF	RBG30076100	(100 µg)

Description

TNF-alpha is a pleiotropic pro-inflammatory cytokine secreted by various cells, including adipocytes, activated monocytes, macrophages, B cells, T cells and fibroblasts. It belongs to the TNF family of ligands, and signals through two receptors, TNFR1 and TNFR2. TNF-alpha is cytotoxic to a wide variety of tumor cells, and is an essential factor in mediating the immune response against bacterial infections. TNF-alpha also plays a role in the induction of septic shock, autoimmune diseases, rheumatoid arthritis, inflammation, and diabetes. Human and murine TNF-alpha demonstrate significant cross-species reactivity. TNF-alpha exists in two forms; a type II transmembrane protein, and a mature soluble protein. The TNF-alpha transmembrane protein is proteolytically cleaved to yield a soluble, biologically active, 17 kDa TNF-alpha, which forms a non-covalently linked homotrimer in solution. Recombinant Rat TNF-alpha is a soluble 157 amino acid protein (17.3 kDa) which corresponds to C-terminal extracellular domain of the full length transmembrane protein.

Introduction to the Molecule

TNF-alpha (17.5 kDa, 157 amino acid) is a non-glycosylated protein that is a potent lymphoid factor, which exerts cytotoxic effects on a wide range of tumor cells and other target cells. It is secreted by macrophages, monocytes, neutrophils, T-cells and NK-cells following their stimulation by bacterial lipopolysaccharides. TNF-alpha has been suggested to play a pro-inflammatory role and has been detected in synovial fluid of patients with rheumatoid arthritis.

Research topic

Animal studies, Cytokines and chemokines and related molecules, Energy metabolism and body weight regulation

Amino Acid Sequence

MLRSSSQNSS DKPVAHVVAN HQAEEQLEWL SQRANALLAN GMDLKDNQLV VPADGLYLIY SQVLFKGGQC PDYVLLTHTV
SRFAISYQEK VSLLSAIKSP CPKDTPEGAE LKPWYEPMYL GGVFQLEKGD LLSAEVNLPK YLDITESGQV YFGVIAL

Source

E. coli

Purity

98%

Biological Activity

The ED₅₀ as determined by the cytolysis of murine L929 cells in the presence of actinomycin D is ? 0.05 ng/ml, corresponding to a specific activity of ? 2x10⁷ units/mg.

Endotoxin

Endotoxin level is <0.1 ng/µg of protein (<1EU/µg).

Reconstitution

Centrifuge the vial prior to opening. Reconstitute in water to a concentration of 0.1-1.0 mg/ml. Do not vortex. For extended storage, it is recommended to further dilute in a buffer containing a carrier protein (example 0.1% BSA) and store in working aliquots at -20°C to -80°C.

Storage, Stability/Shelf Life

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