Catalog # 78068.1  78068
10 µg  50 µg

Product Description
Tumor necrosis factor-α (TNF-α) is a pro-inflammatory cytokine that activates NF-κB, MAPK, and PI3K/AKT pathways. Activated T cells and macrophages are the primary producers of TNF-α in response to inflammation and infectious conditions. Many other cell types have been shown to produce TNF-α, among them B cells, NK cells, neutrophils, dendritic cells, microglia, endothelial cells, smooth muscle cells, cardiomyocytes, and fibroblasts. TNF-α has cytotoxic effects on cancer cells in vitro by stimulating anti-tumor immunosuppressive responses. TNF-α stimulates expression of E- and P-selectins, thus facilitating adhesion of neutrophils, monocytes, and memory T cells to activated platelets and endothelial cells (Zelová & Hosek). Other effects of TNF-α include vasodilatation and edema formation.

Product Information
- Alternative Names: Cachectin, Cachexin, Cytotoxin, DIF, Necrosin, TNF, TNF-α, TNFSF2, Tumor necrosis factor-α
- Accession Number: P01375
- Amino Acid Sequence: MVRSSRTPS DKPVAHVAN PQAEGQLQWL NRRANALLAN GVELRDNLV VPSEGLYLIY SQVLFKGQGC
  PSTHVLLTHT ISRIAVSYQT KVNLLSAIKS PCQRETPEGA EAKPWYEPIY LGGVFQLEKG DRLSAEINRP DYLDFAESGQ VYFGIIAL
- Predicted Molecular Mass: 17.5 kDa
- Species: Human
- Cross Reactivity: Mouse, Rat, Monkey
- Formulation: Lyophilized from a sterile-filtered aqueous solution containing sodium phosphate, pH 7.5.
- Source: E. coli

Specifications
- Activity: The specific activity is ≥ 5 x 10^5 units/mg (EC50 ≤ 2 ng/mL) as determined by the cytolysis of mouse L929 cells growing in the presence of actinomycin D.
- Purity: ≥ 95%
- Endotoxin Level: Measured by kinetic Limulus amebocyte lysate (LAL) analysis and is ≤ 1 EU/µg protein.

Preparation and Storage
- Storage: Store at -20°C to -80°C.
- Stability: Stable as supplied for 12 months from date of receipt.
- Preparation: Centrifuge vial before opening. Reconstitute the product in sterile water to at least 0.1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex.

OPTIONAL: After reconstitution, if product will not be used immediately, dilute with concentrated bovine serum albumin (BSA) to a final BSA concentration of 0.1%. The effect of storage of stock solution on product performance should be tested for each application. As a general guide, do not store at 2 - 8°C for more than 1 month or at -80°C for more than 3 months. Avoid repeated freeze-thaw cycles.
(A) The biological activity of Human Recombinant TNF-alpha was tested by its ability to induce cytolysis of mouse L929 cells growing in the presence of actinomycin D. Cell viability was measured after 48 hours of culture using a fluorometric assay method. The EC50 is defined as the effective concentration of the growth factor at which cell viability is at 50% of maximum. The EC50 in the above example is 0.4 - 0.6 ng/mL.

(B) 1 μg of Human Recombinant TNF-alpha was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining. Human Recombinant TNF-alpha has a predicted molecular mass of 17.5 kDa.

Related Products

For a complete list of cytokines, as well as related products available from STEMCELL Technologies, visit www.stemcell.com/cytokines or contact us at techsupport@stemcell.com.

References