TNF-alpha Human E. coli

Product Data Sheet

Type: Recombinant
Source: E. coli
Species: Human
Other names: Cachectin, Tumor necrosis factor alpha, DIF

Cat. No.:

RBG10325010	(10 µg)
RBG10325050	(50 µg)
RBG10325100	(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 proteolitically cleaved to yield a soluble, biologically active, 17 kDa TNF-alpha, which forms a non-covalently linked homotrimer in solution. Recombinant Human TNF-alpha is a soluble 157 amino acid protein (17.4 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

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VRSSSRTPSD KPVAHVVANP QAEGQLQWLN RRANALLANG VELRDNQLVV PSEGLYLIYS QVLFKGQGCP STHVLLTHTI
SRIAVSYQTK VNLLSAIKSP CQRETPEGAE AKPWYEPIYL GGVFQLEKGD RLSAEINRPD YLDFAESGQV YFGIIAL
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Source

E. coli

Purity

98% by SDS-PAGE gel and HPLC analyses

Biological Activity

The ED_{50} 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 ? 2×10^7 units/mg.

Endotoxin

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

Formulation

Sterile filtred through a 0.2 micron filter. Lyophilized from 3mM Tris, pH 8.0

Reconstitution

Centrifuge the vial prior to opening. Reconstitute in water to a concentration of 0.1-1.0 mg/ml. Note: Allow the reconstituted vial to sit at room temperature for 2 hours before use. Do not vortex. This solution can be stored at 2-8°C for up to 1 week. 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

-20°C

Note

For Research Use Only

HEADQUARTERS: BioVendor Laboratorní medicína, a.s.	Karasek 1767/1	621 00 Brno CZECH REPUBLIC	Phone: +420-549-124-185 Fax: +420-549-211-460	E-mail: Web:	info@biovendor.com sales@biovendor.com www.biovendor.com
AUSTRIA: BioVendor GesmbH	Nußdorfer Straße 20/10	1090 Vienna AUSTRIA	Phone: +43-1-89090-25 Fax: +43-1-89090-2515	E-mail:	infoAustria@biovendor.com
GERMANY, SWITZERLAND: BioVendor GmbH	Otto-Hahn-Straße 16	34123 Kassel GERMANY	Phone: +49-6221-433-9100 Fax: +49-6221-433-9111	E-mail:	infoEU@biovendor.com
USA, CANADA AND MEXICO: BioVendor LLC	128 Bingham Rd. Suite 1300	Asheville, NC 28806 USA	Phone: +1-828-575-9250 +1-800-404-7807 Fax: +1-828-575-9251	E-mail:	infoUSA@biovendor.com