Cytokines

Human Recombinant TNF-alpha, ACF

Tumor necrosis factor-alpha, animal component-free

Catalog #	78157	10 µg
	78157.1	100 µg
	78157.2	1000 µg

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Product Description

Tumor necrosis factor alpha (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, mast 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. This product is animal component-free.

Product Information

Alternative Names:	Cachectin, Cachexin, Cytotoxin, DIF, Necrosin, TNF, TNF-α, TNFSF2, Tumor necrosis factor-α
Accession Number:	P01375
Amino Acid Sequence:	MVRSSSRTPS DKPVAHVVAN PQAEGQLQWL NRRANALLAN GVELRDNQLV 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

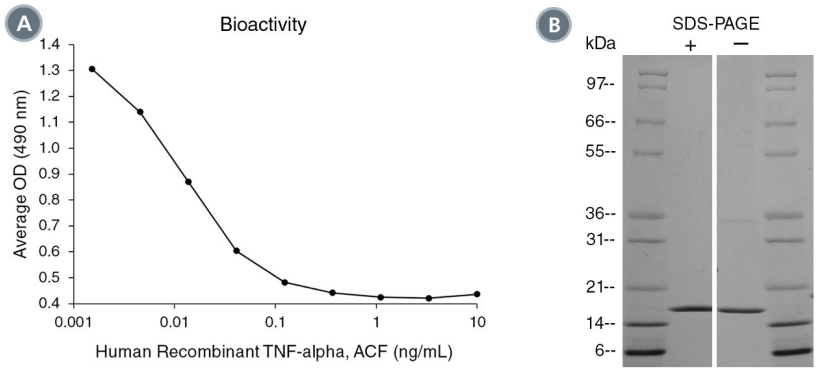
Specifications

Activity:	The specific activity is ≥ 5.0 x 10^5 units/mg (EC50 ≤ 2 ng/mL) as determined by induced cytolysis of L929 cells 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.

Data



(A) The biological activity of Human Recombinant TNF-alpha, ACF was tested by its ability to inhibit growth of mouse L929 cells in the presence of actinomycin D. Inhibition of cell proliferation 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 proliferation inhibition is at 50% of maximum. The EC50 in the example above is 0.00877 ng/mL.
(B) 1 µg of Human Recombinant TNF-alpha, ACF was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining. Human Recombinant TNF-alpha, ACF 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

Zelová H & Hošek J. (2013) TNF-α signalling and inflammation: interactions between old acquaintances. Inflamm Res 62(7): 641–51.