

Cytokines

Rat Recombinant TNF-alpha

Tumor necrosis factor alpha



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Catalog #78124
78124.1

10 µg
50 µg

Product Description

Tumor necrosis factor-alpha (TNF- α) is a pro-inflammatory cytokine that activates NF- κ B, 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 cancerous cells 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 & Hošek). Other effects of TNF- α include vasodilatation and edema formation. In vitro studies of adult rat neural progenitor cells (NPCs) demonstrate that TNF- α reduces neurogenesis in dentate gyrus-derived NPCs and promotes astrogliogenesis in subventricular zone-derived NPCs (Borsini et al.).

Product Information

Alternative Names:	Cachectin, Cytotoxin, Differentiation-inducing factor, DIF, Necrosin, TNFA, TNFSF2, Tumor necrosis factor
Accession Number:	P06804
Amino Acid Sequence:	MLRSSSQNSS DKPVAHVVAN HQVEEQLEWL SQRANALLAN GMDLKDNQLV VPADGLYLVY SQVLFGQGQC PDYVLLTHTV SRFAISYQEK VNLLSAVKSP CPKDTPEGAE LKPWYEPIYL GGVFQLEKGD QLSAEVNLPK YLDFAESGQV YFGVIAL
Predicted Molecular Mass:	17.4 kDa
Species:	Rat
Formulation:	Lyophilized after dialysis against phosphate-buffered saline.
Source:	<i>P. pastoris</i>

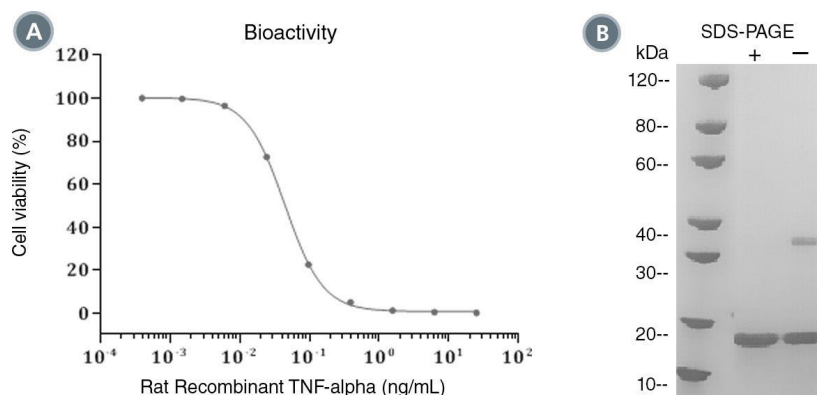
Specifications

Activity:	The specific activity is $\geq 2.0 \times 10^7$ units/mg ($EC_{50} \leq 0.05$ ng/mL), as determined by a cytotoxicity assay of mouse L929 cells in the presence of actinomycin D.
Purity:	$\geq 95\%$
Endotoxin Level:	Measured by kinetic Limulus amoebocyte lysate (LAL) analysis and is ≤ 0.2 EU/µg protein.

Preparation and Storage

Storage:	Store at -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. As a general guide, do not store at 2 - 8°C for more than 2 weeks or at -20°C for more than 3 months. Avoid repeated freeze-thaw cycles.

Data



(A) The biological activity of Rat Recombinant TNF-alpha was tested by its ability to inhibit cell growth of mouse L929 cells. The EC50 is defined as the effective concentration of the growth factor at which cell proliferation is at 50% of maximum. The EC50 in the above example is less than 0.05 µg/mL.

(B) 2 µg of Rat Recombinant TNF-alpha was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining. Rat Recombinant TNF-alpha has a predicted molecular mass of 17.4 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

Borsini A. et al. (2015) The role of inflammatory cytokines as key modulators of neurogenesis. *Trends in Neurosciences* 38(3): 145–57. Zelová H & Hošek J. (2013) TNF-α signalling and inflammation: interactions between old acquaintances. *Inflamm Res* 62(7): 641–51.

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