

Cytokines

Rat Recombinant TNF-alpha



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Tumor necrosis factor alpha

Catalog # 78124
78124.1

10 µg
50 µg

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 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 astroglialogenesis 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: P16599

Amino Acid Sequence: MLRSSSQNSS DKPVAHVVAN HQAEEQLEWL SQRANALLAN GMDLKDNQLV VPADGLYLIY SQVLFKGQGC PDYVLLTHTV SRFAISYQEK VSLLSAIKSP CPKDTPEGAE LKPWYEPMYL GGVFQLEKGD LLSAEVNLPK YLDITESGQV YFGVIAL

Predicted Molecular Mass: 17.4 kDa

Species: Rat

Cross Reactivity: Human, Mouse

Formulation: Lyophilized after dialysis against phosphate-buffered saline.

Source: P. pastoris

Specifications

Activity: The specific activity is $\geq 2.0 \times 10^7$ units/mg ($EC_{50} \leq 0.05$ ng/mL) as determined by cytotoxicity assay of mouse L929 cells in the presence of actinomycin D.

Purity: $\geq 95\%$

Endotoxin Level: Measured by kinetic Limulus amebocyte lysate (LAL) analysis and is ≤ 0.2 EU/µg protein.

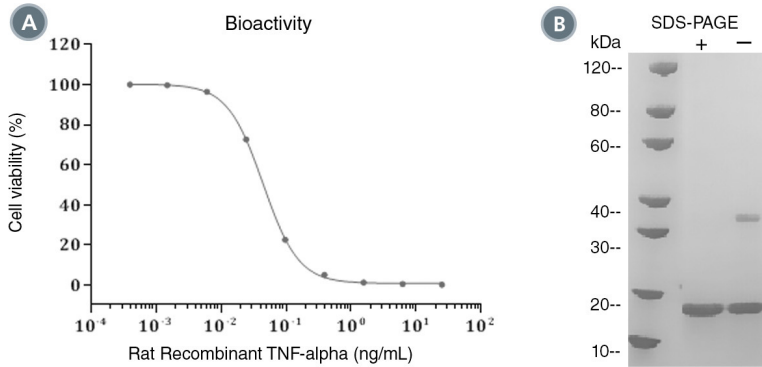
Preparation and Storage

Storage: Store at -80°C.

Stability: Stable as supplied for 12 months from date of receipt.

Preparation: Centrifuge vial before opening. Resuspend 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. Store at 2 - 8°C for up to 2 weeks or at -20°C to -80°C for up to 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. Cell viability was measured using a fluorometric assay method. 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 ng/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.

Related Products

For a complete list of cytokines, as well as related products available from STEMCELL Technologies, please visit our website at 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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