

Product Information

TNF- α , Human

Animal Component-Free, recombinant expressed in *E. coli*, suitable for cell culture

SRP3177

Storage Temperature: $-20\text{ }^{\circ}\text{C}$

Synonym: Tumor necrosis factor alpha, TNFa, cachexin, cachectin, adipokine, differentiation-inducing factor

Product Description

TNF- α (tumor necrosis factor α) is a pleiotropic pro-inflammatory cytokine secreted by a wide variety of immune cells, like activated macrophages and monocytes, as well as epithelial, endothelial, and tumor cells, and plays a central role in inflammation, immune system development, apoptosis, and lipid metabolism. It belongs to the TNF family of ligands and signals through two receptors, TNFR1 and TNFR2.^{1,2}

Dysregulation of TNFa production has been implicated in a variety of human diseases, including major depression, Alzheimer's disease, and cancer.³

Tumor necrosis factor- α (TNF- α) is synthesized as a 26-kDa transmembrane protein (mTNF- α), which may present on the cell surface or be processed to release the 17-kDa soluble form (sTNF- α) by TACE enzyme.⁴

The biological activity of TNF- α is measured in culture by the cytotoxicity of murine L929 cells, a TNF-sensitive mouse fibrosarcoma line in the presence of Actinomycin D. The ED₅₀ is defined as the effective concentration of growth factor that elicits 50% inhibition of cell growth.⁵

This product is lyophilized from a 0.2 μm -filtered phosphate buffer solution, pH 7.4.

This product is free from animal components.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

It is recommended to centrifuge the vial before reconstitution. A stock solution may be prepared by reconstitution in sterile water to a concentration of 0.1 mg/mL. The stock solution may be diluted further using culture media.

Storage/Stability

Store the product at $-20\text{ }^{\circ}\text{C}$. After reconstitution, the product can be stored at $2-8\text{ }^{\circ}\text{C}$ for up to 1 month. For extended storage, freeze in working aliquots. Repeated freezing and thawing are not recommended. Do not store in a frost-free freezer.

References

1. Juhasz, K. et al., Expert Rev. Clin. Immunol. 9,335. (2013).
2. Baloch, Z., et al., Int. J. Mol. Sci., 17(5), 733 (2016).
3. Raynolds, R., et al., Acta Neuropathol. Commun., 9, 159 (2021).
4. H,Xu. et al., Diabetes 51, 1876. (2002).
5. Evans, T J., Mol Biotechnol. 15, 243. (2000).

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