

Contents

1. Description
 - 1.1 Background information
 - 1.2 Applications
2. References

1. Description

Products	Human TNF- α , premium grade. Recombinant human tumor necrosis factor α .				
	<table border="1"> <thead> <tr> <th>Content in μg</th> <th>Order no.</th> </tr> </thead> <tbody> <tr> <td>10</td> <td>130-094-014</td> </tr> </tbody> </table>	Content in μg	Order no.	10	130-094-014
Content in μg	Order no.				
10	130-094-014				
Biological activity	The ED ₅₀ is ≤ 0.025 corresponding to an activity of $\geq 4 \times 10^7$ IU/mg. For lot-specific activities, please contact our technical support. ▲ Note: The specific activity is determined by cytotoxicity assay using L929 cells provided by the German Collection of Microorganisms and Cell Cultures (DSMZ) in the presence of 1 $\mu\text{g}/\text{mL}$ actinomycin D according to Baarsch <i>et al.</i> The cytotoxicity assay was calibrated with the international standard for human TNF- α (NIBSC code 88/786) provided by the National Institute for Biological Standards and Control.				
Primary structure	Single, non-glycosylated polypeptide chain (157 amino acid residues).				
Molecular mass	17.4 kDa.				
Source	Produced in <i>E. coli</i> .				
Product format	Lyophilized from a filtered (0.2 μm) buffer solution.				
Stabilizer	Trehalose and Mannitol.				
Purity	>97% as determined by SDS-PAGE analysis.				
Endotoxin level	Low endotoxin (<1.0 EU/ μg cytokine) as determined by Limulus Amebocyte Lysate (LAL) assay.				
Storage	Lyophilized Human TNF- α , premium grade should be stored at -20 °C. The expiration date is indicated on the vial label. Upon reconstitution aliquots should be stored at -20 °C or below. Avoid repeated freeze-thaw cycles.				
Reconstitution	It is recommended to reconstitute lyophilized Human TNF- α , premium grade with deionized sterile-filtered water to a final concentration of 0.1–1.0 mg/mL in a minimal volume of 100 μL . Further dilutions should be prepared with 0.1% bovine serum albumin (BSA) or human serum albumin (HSA) in phosphate-buffered saline.				

1.1 Background information

Tumor necrosis factor α (TNF- α) is a proinflammatory cytokine mainly produced by activated monocytes and macrophages in response to infection, injury, and tumor burden. TNF- α production has also been reported for a variety of other cell types involved in inflammatory responses, including T cells, NK cells, and neutrophils as well as a number of non-immune cells, such as keratinocytes and astrocytes. TNF- α has a broad spectrum of biological activities. In addition to its central role in inflammation, TNF- α is noted for its cytotoxic and tumoricidal abilities either by necrosis or induction of apoptosis. Further functions include antiviral activity, growth modulation, and induction of cellular differentiation. Despite its various beneficial actions, TNF- α also plays a detrimental role in, for example, septic shock syndrome, tissue injury, inflammation, cachexia, and diabetes.

1.2 Applications

TNF- α can be used for a variety of applications, including:

- Induction of Mo-DC maturation.
- Cytotoxicity and cell proliferation assays.
- Assessment of apoptosis and viral protection.
- Investigation of TNF- α -induced signaling pathways.

Optimal concentration for a specific application should be determined by a dose-response experiment.

2. References

1. Baarsch, M. J. *et al.* (1991) Detection of tumor necrosis factor alpha from porcine alveolar macrophages using an L929 fibroblast bioassay. *J. Immunol. Methods* 140: 15–22.
2. Barbara, J. A. *et al.* (1996) Tumour necrosis factor-alpha (TNF-alpha): the good, the bad and potentially very effective. *Immunology and Cell Biology* 74: 434–443.
3. Yeung, M. C. *et al.* (1996) An essential role for the interferon-inducible, double-stranded RNA-activated protein kinase PKR in the tumor necrosis factor-induced apoptosis in U937 cells. *Proc. Natl. Acad. Sci. U.S.A.* 93: 12451–12455.
4. Black, R. A. *et al.* (1997) A metalloproteinase disintegrin that releases tumour necrosis factor-alpha from cells. *Nature* 385: 729–733.

Refer to www.miltenyibiotec.com for all data sheets and protocols.

Warranty

The products sold hereunder are warranted only to be free from defects in workmanship and material at the time of delivery to the customer. Miltenyi Biotec GmbH makes no warranty or representation, either expressed or implied, with respect to the fitness of a product for a particular purpose. There are no warranties, expressed or implied, which extend beyond the technical specifications of the products. Miltenyi Biotec GmbH's liability is limited to either replacement of the products or refund of the purchase price. Miltenyi Biotec GmbH is not liable for any property damage, personal injury or economic loss caused by the product.

MACS is a registered trademark of Miltenyi Biotec GmbH.

Unless otherwise specifically indicated, Miltenyi Biotec products and services are for research use only and not for diagnostic or therapeutic use.

Copyright © 2016 Miltenyi Biotec GmbH. All rights reserved.