

Recombinant Human TNF-alpha Protein (GMP Grade)

Please read the manual carefully before use

Cat. No. PM116

Version No. Version 1.1

Storage: at -18°C or below for two years

Description

Tumor necrosis factor (TNF) is primarily produced by activated monocytes/macrophages. It can kill and inhibit tumor cells, promote phagocytosis by neutrophils, combat infections, induce fever, stimulate the synthesis of acute-phase proteins in hepatocytes, promote the differentiation of myeloid leukemia cells into macrophages, and facilitate cell proliferation and differentiation. As a key inflammatory factor, it is involved in the pathological damage of certain autoimmune diseases [1-3]. Based on its origin and structure, TNF is classified into two types: TNF- α and TNF- β . The TNF- α precursor consists of 233 amino acids, including a signal peptide of 76 amino acid residues. Under the action of TNF-converting enzyme (TACE), the signal peptide is cleaved, resulting in the mature form of TNF- α , which comprises 157 amino acid residues [4-5].

Product Information

Expression System: CHO

Molecular Weight: 17.4 kDa

Purity: >95% by SDS-PAGE

Endotoxin Concentration: <10 EU/mg

Biological Activity: Determined by a cytotoxicity assay using mouse fibroblast L-929 cells. The ED₅₀ is 5-60 pg/ml.

Form: Sterile lyophilized powder

Kit Content

Component	PM116-01	PM116-02	PM116-03
Recombinant Human TNF-alpha Protein (GMP Grade)	10 μ g	50 μ g	1 mg

Usage Guide

- The lyophilized powder is stable for 2 years when stored at -18°C or below.
- Reconstitution: Dissolve in sterile water for injection (WFI) or sterile ultrapure water to a final concentration of ≥ 100 μ g/ml, then aliquot and store under the following conditions: -20°C (stable for 6 months), -80°C (stable for 12 months), or 2-8°C (stable for 1 week for short-term use). Avoid repeated freeze-thaw cycles to maintain stability.

References

- [1] Bishehsari F, Sharma A, Stello K, Toth C, O'Connell MR, Evans AC, LaRusch J, Muddana V, Papachristou GI, Whitcomb DC. TNF-alpha gene (TNFA) variants increase risk for multi-organ dysfunction syndrome (MODS) in acute pancreatitis. *Pancreatology*. 2012, 12(2):113-118.
- [2] Ho YP, Chiu CT, Sheen IS, Tseng SC, Lai PC, Ho SY, Chen WT, Lin TN, Lin CY. Tumor necrosis factor- α and interleukin-10 contribute to immunoparalysis in patients with acute pancreatitis. *Hum Immunol*. 2011 Jan;72(1):18-23.
- [3] Eyerich S, Wagener J, Wenzel V, Scarponi C, Pennino D, Albanesi C, Schaller M, Behrendt H, Ring J, Schmidt-Weber CB, Cavani A, Mempel M, Traidl-Hoffmann C, Eyerich K. IL-22 and TNF- α represent a key cytokine combination for epidermal integrity during infection with *Candida albicans*. *Eur J Immunol*. 2011, 41(7):1894-1901.
- [4] Hayden MS, Ghosh S. Regulation of NF- κ B by TNF family cytokines. *Semin Immunol*. 2014, 26(3):253-266.
- [5] Kwon YW, Heo SC, Jeong GO, Yoon JW, Mo WM, Lee MJ, Jang IH, Kwon SM, Lee JS, Kim JH. Tumor necrosis factor- α -activated mesenchymal stem cells promote endothelial progenitor cell homing and angiogenesis. *Biochim Biophys Acta*. 2013, 1832(12):2136-2144.

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