

# Recombinant human TNF- $\alpha$

CHO expressed human tumor necrosis factor alpha with HSA

Catalog # rcyc-htnfa

For research use only, not for diagnostic or therapeutic use

Version # 16I02-MM

## PRODUCT INFORMATION

### Content:

- 20  $\mu$ g of recombinant human TNF- $\alpha$  provided as a white lyophilized powder
- 1.5 ml endotoxin-free water

### Storage and stability:

- Recombinant human TNF- $\alpha$  is shipped at room temperature. Upon receipt it should be stored at -20  $^{\circ}$ C.
- Upon resuspension, prepare aliquots of recombinant human TNF- $\alpha$  and store at 4  $^{\circ}$ C for 1 week or at -20  $^{\circ}$ C to -80  $^{\circ}$ C for 12 months.

*Note: Avoid repeated freeze-thaw cycles.*

### Quality control

- Purity greater than 97% as determined by SDS-PAGE.
- Endotoxin levels <0.1 EU/ $\mu$ g as determined using a kinetic chromogenic LAL assay.
- Biological activity is tested using HEK-Blue<sup>™</sup> TNF- $\alpha$  cells (see validation data sheet available on our website).

## DESCRIPTION

Tumor necrosis factor-alpha (TNF- $\alpha$ ) is a pleiotropic inflammatory cytokine produced by several types of cells, predominantly activated macrophages<sup>1</sup>. TNF- $\alpha$  plays an important role in the immune response to microbial invasions and in the necrosis of specific tumors. TNF- $\alpha$  binds two receptors TNFR1 and TNFR2 inducing NF- $\kappa$ B and MAPK signaling pathways. TNF- $\alpha$  exists in two forms; a type II transmembrane protein and a mature soluble protein. The TNF- $\alpha$  transmembrane protein is proteolytically cleaved to yield a soluble protein<sup>3</sup>, which subsequently forms a non-covalently linked homotrimer in solution. The individual subunits of this homotrimer have a relative molecular mass each of 17350 Daltons.

Recombinant human TNF- $\alpha$  is intended for use in cell culture applications. Recombinant human TNF- $\alpha$  is produced in Chinese hamster ovary (CHO) cells transfected with the full-length sequence for the human TNF- $\alpha$  gene. These transfected cells produce and secrete biologically active TNF- $\alpha$ .

**1. Sedger L. & McDermott M., 2014.** TNF and TNF-receptors: From mediators of cell death and inflammation to therapeutic giants - past, present and future. Cytokine Growth Factor Rev. 25(4):453-72. **2. Wajant H. et al., 2003.** Tumor necrosis factor signaling. Cell Death Differ. 2003 10(1):45-65. **3. Kriegler M. et al., 1988.** A novel form of TNF/cachectin is a cell surface cytotoxic transmembrane protein: ramifications for the complex physiology of TNF. Cell. 53(1):45-53.

## CHARACTERISTICS

**Source:** Mammalian; Chinese hamster ovary (CHO) cells

**Gene ID:** 7124

**UniProt ID:** P01375

**Molecular mass:**  $\approx$  17 kDa (as determined by SDS-PAGE)

**Formulation:** Recombinant human TNF- $\alpha$  was lyophilized from a 0.2  $\mu$ m filtered phosphate buffer solution (pH 7.4) containing human serum albumin (HSA).

**Solubility:** 100  $\mu$ g/ml in water

## METHOD

### **Preparation of stock solution (100 $\mu$ g/ml):**

1. Add 200  $\mu$ l endotoxin-free water (provided) to 20  $\mu$ g of recombinant human TNF- $\alpha$ .
2. Mix by pipetting. Do not vortex.
3. Prepare aliquots of recombinant human TNF- $\alpha$  and store at 4  $^{\circ}$ C for 1 week or at -20  $^{\circ}$ C to -80  $^{\circ}$ C for 12 months. Avoid freeze-thaw cycles.
4. Further dilutions can be prepared in the appropriate aqueous buffer, such as cell culture medium containing serum.

## RELATED PRODUCTS

Product	Catalog Code
Anti-hTNF- $\alpha$ -hIgG1	htnfa-mab1
HEK-Blue <sup>™</sup> TNF- $\alpha$ Cells	hkb-tnfdmyd

## TECHNICAL SUPPORT

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