



## PRODUCT INFORMATION

# Human Recombinant Tumor Necrosis Factor alpha

**Expressed in *E. coli***

**Cell Culture Tested**

**Product Code: TC313**

### Product Description:

Synonyms: TNF- $\alpha$ , Cachectin, Necrosin, Differentiation-inducing factor (DIF).

Amino Acid Sequence:

VRSSSRTPSD KPAHVAVANP QAEGQLQWLN RRANALLANG  
VELRDNQLVV PSEGLYLIYS QVLFKGQGCP STHVLLTHTI  
SRIAVSYQTK VNLLSAIKSP CQRETPEGAE AKPWYEPIYL  
GGVFQLEKGD RLSAEINRPD YLDFAESGQV YFGIHAL

Tumor Necrosis Factor alpha (TNF- $\alpha$ ) belongs to the TNF family of ligands. It is a pleiotropic pro-inflammatory cytokine that signals through two receptors, TNFR1 and TNFR2. It is cytotoxic to a wide variety of tumor cells, and is an essential factor in mediating the immune response against bacterial infections. It also plays an important role in the induction of septic shock, autoimmune diseases, rheumatoid arthritis, inflammation and diabetes. Recombinant Human TNF- $\alpha$  is a soluble 157 amino acid protein (17.4 kDa) which corresponds to C-terminal extracellular domain of the full length transmembrane protein.

TC313 is recombinant Human Tumor Necrosis Factor alpha expressed in *E. coli*, filtered through 0.22 $\mu$  membrane filter and lyophilized (freeze-dried) from 3mM Tris, pH 8.0.

### Cross Reactivity:

Bacteria, Cow, Dog, Human, Human + Mouse, Human + Rat, Human + Virus, Monkey, Mouse, Pig, Rat and Sheep.

### Directions:

1. Centrifuge the vial prior to opening.
2. Surface sterilize using 70% isopropyl alcohol and take it into laminar air flow cabinet.
3. Aseptically reconstitute the lyophilized powder in water to 0.1-1.0 mg/ml.

*Note: Do not vortex. Allow the reconstituted vial to sit at room temperature for 2 hours before use.*

4. For extended storage it is recommended to further dilute in a buffer containing a carrier protein (such as 0.1% BSA) and store in working aliquots at -20°C to -80°C. Avoid repeated freeze-thaw cycles.

### Quality Control:

**Purity (by SDS-PAGE and HPLC)**  
NLT 98%

**Endotoxin Content**  
NMT 1EU/ $\mu$ g

**Biological Activity:** The ED<sub>50</sub> is determined by the cytolysis of murine L929 cells in the presence of Actinomycin D is  $\leq 0.05$  ng/ml, corresponding to a specific activity of  $\geq 2 \times 10^7$  units.mg.

### Storage and Shelf Life:

Shelf life of TNF- $\alpha$  depends on the storage temperature and the form in which it is stored. Please refer the table for recommended storage time of different forms of TNF- $\alpha$  at different storage temperatures.

Product form	Temperature	Storage time
Lyophilized	-20° to -80°C	See expiry date given on the product label
	4°C	12 months
	RT	1 month
Dilute as per directions	-20° to -80°C	12 months
	2°C to 8°C	1 week

Once reconstituted, aliquot the solution into the smaller volumes and freeze for future use. Repeated freezing and thawing of the reconstituted frozen solution should be avoided to retain potency of the growth factor.

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**Disclaimer:**

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