

# Recombinant Porcine Tumor Necrosis Factor

**Cat. No.** TNF-309P    **Lot. No.** (See product label)

## SPECIFICATION

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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| <b>Product Overview</b>    | Recombinant Porcine Tumor Necrosis Factor- $\alpha$ produced in <i>E. Coli</i> is a single, non-glycosylated, polypeptide chain containing 157 amino acids and having a molecular mass of 17,274 Dalton. The TNF- $\alpha$ is purified by standard chromatographic techniques.                                                                                                                                                                                                                                                                                                                                       |
| <b>Species</b>             | Pig                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Source</b>              | E.coli                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Description</b>         | Tumor necrosis factor is a cytokine involved in systemic inflammation and is a member of a group of cytokines that all stimulate the acute phase reaction. TNF is mainly secreted by macrophages. TNF causes apoptotic cell death, cellular proliferation, differentiation, inflammation, tumorigenesis and viral replication, TNF is also involved in lipid metabolism, and coagulation. TNF's primary role is in the regulation of immune cells. Dysregulation and, in particular, overproduction of TNF have been implicated in a variety of human diseases- autoimmune diseases, insulin resistance, and cancer. |
| <b>Amino Acid Sequence</b> | The sequence of the first five N-terminal amino acids was determined and was found to be Met-Leu-Arg-Ser-Ser.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Biological Activity</b> | The $ED_{50}$ as determined by the cytotoxicity of porcine PK15 cells was found to be $<0.008$ ng/ml.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Protein Content</b>     | Protein quantitation was carried out by two independent methods: 1. UV spectroscopy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

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at 280 nm using the absorbency value of 1.26 as the extinction coefficient for a 0.1% (1mg/ml) solution. This value is calculated by the PC GENE computer analysis program of protein sequences (IntelliGenetics). 2. Analysis by RP-HPLC, using a calibrated solution of TNF-a as a Reference Standard.

**Purity**

Greater than 95.0% as determined by: (a) Analysis by RP-HPLC. (b) Analysis by SDS-PAGE.

**Physical Appearance**

Sterile Filtered White lyophilized (freeze-dried) powder.

**Formulation**

The protein was lyophilized with no additives.

**Solubility**

It is recommended to reconstitute the lyophilized Tumor Necrosis Factor-alpha in sterile 18MΩ-cm H<sub>2</sub>O not less than 100g/ml, which can then be further diluted to other aqueous solutions.

**Stability**

Lyophilized Tumor Necrosis Factor-a although stable at room temperature for 3 weeks, should be stored desiccated below -18°C. Upon reconstitution TNF-a should be stored at 4°C between 2-7 days and for future use below -18°C. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA). Please prevent freeze-thaw cycles.

## GENE INFORMATION

**Gene Name**

TNF tumor necrosis factor (TNF superfamily, member 2) [ *Sus scrofa* ]

**Synonyms**

TNF; tumor necrosis factor (TNF superfamily, member 2); TNFa; tumor necrosis factor alpha; TNF-alpha; Tumor-necrosis factor

**Gene ID**

397086

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| <b>mRNA Refseq</b>         | <a href="#">NM_214022</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Protein Refseq</b>      | <a href="#">NP_999187</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>UniProt ID</b>          | <a href="#">P23563</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Chromosome Location</b> | 7p11-q11                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Pathway</b>             | Adipocytokine signaling pathway; Allograft rejection; Alzheimer"s disease; Amyotrophic lateral sclerosis (ALS); Apoptosis; Asthma; Cytokine-cytokine receptor interaction; Dilated cardiomyopathy; Fc epsilon RI signaling pathway; Graft-versus-host disease; Hematopoietic cell lineage; Hypertrophic cardiomyopathy (HCM); MAPK signaling pathway; NOD-like receptor signaling pathway; Natural killer cell mediated; RIG-I-like receptor signaling pathway; Systemic lupus erythematosus; T cell receptor signaling pathway; TGF-beta signaling pathway; Toll-like receptor signaling pathway; Type I diabetes mellitus; Type II diabetes mellitus |

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