

# Ferret TNF-alpha / TNFA Protein



Sino Biological Inc.

Biological Solution Specialist

Catalog Number: 60002-FNAE

## General Information

### Gene Name Synonym:

TNF-alpha

### Protein Construction:

A DNA sequence encoding the mature form of Ferret (*Mustela putorius furo*) TNF $\alpha$  (A3FBF1) (Val 77-Leu 233) was expressed, with an initial Met at the N-terminus.

**Source:** Ferret

**Expression Host:** E. coli

## QC Testing

**Purity:** > 95 % as determined by SDS-PAGE

## Bio-Activity

Measured in a cytotoxicity assay using L929 mouse fibrosarcoma cells in the presence of the metabolic inhibitor actinomycin D. The EC<sub>50</sub> for this effect is typically 50-200 pg/ml.

## Endotoxin:

Please contact us for more information.

## Stability:

Samples are stable for up to twelve months from date of receipt at -70 °C

**Predicted N terminal:** Met

## Molecular Mass:

The recombinant Ferret TNF $\alpha$  consists of 158 amino acids and has a calculated molecular mass of 17.3 kDa. The apparent molecular mass of the recombinant protein is approximately 16 kDa in SDS-PAGE under reducing conditions.

## Formulation:

Lyophilized from sterile PBS, pH 7.4

Normally 5 % - 8 % trehalose and mannitol are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

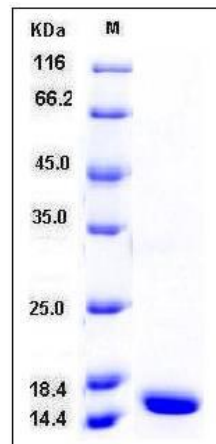
## Usage Guide

### Storage:

Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

## SDS-PAGE:



## Reconstitution:

Detailed reconstitution instructions are sent along with the products.

## Protein Description

Tumor necrosis factor alpha (TNF $\alpha$ ), also known as cachectin and TNFSF1A, is the prototypic cytokine of the TNF superfamily, and is a multifunctional molecule involved in the regulation of a wide spectrum of biological processes including cell proliferation, differentiation, apoptosis, lipid metabolism, and coagulation. TNF $\alpha$  is produced mainly by macrophages, and large amounts of this cytokine are released in response to lipopolysaccharide, other bacterial products, and Interleukin-1 (IL-1). TNF $\alpha$  is primarily produced as a 26 kDa type II transmembrane protein arranged in stable homotrimers, and a 55 kDa soluble trimeric form of TNF $\alpha$  is released via proteolytic cleavage by the metalloprotease TACE/ADAM17. Two receptors mediating the TNF $\alpha$  function have been identified, the ubiquitous TNFR1 from which most signaling are derived, and the hematopoietic cell-restricted TNFR2. Upon the TNF $\alpha$  trimers binding, TNF receptors also form trimers, undergo a conformational change, and enable the adaptor protein TRADD to bind to the death domain, and thus initiates the signal pathways such as the NF- $\kappa$ B, Jak/STAT, and the MAPK pathways, as well as the death signaling. As a major mediator of apoptosis, inflammation and immunity, TNF $\alpha$  has been implicated in the pathogenesis of a variety of diseases including autoimmune diseases, insulin resistance, and cancer.

## References

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6. Horssen, RV. et al., 2006, Oncologist. 11: 397-408.
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