PRODUCT DATA SHEET

Product: TNF-α, soluble (human recombinant)

Cat. No.: **TN-002 (50 µg)**

Background:
Tumor necrosis factor α (TNF-α) is a 35 kDa type II transmembrane trimeric protein. TNF-α interacts with two distinct receptors, TNF-R1 and TNF-R2. Whereas both receptors activate NF-κB and JNK, TNF-R1 also signals cell death. Membrane-bound TNF-α is efficiently cleaved and shed by a metalloprotease. The soluble form (sTNF-α) binds to TNF-R1. Triggering of TNF-R2-mediated signals require membrane-bound TNF-α. TNF-α is produced by many cell types including: neutrophils, activated lymphocytes, macrophages, endothelial cells and smooth muscle cells.

Specificity:
Recombinant soluble human TNF-α binds to TNF-R1. Binding to TNF-R2 requires the addition of a cross-linking anti-FLAG antibody (see product TN-011, rhsTNF-α Kit).

Species Reactivity:
Human and mouse. Others not tested.

Recombinant Protein:
The extracellular domain of human TNF-alpha (amino acids 85-223) is fused at the N-terminus to an 8 amino acid linker peptide and a FLAG tag.

Molecular Weight:
~19 kDa (SDS –PAGE)

Production:
Recombinant protein produced in *E. coli*.

Format:
Lyophilized powder containing 50 µg recombinant TNF-α and PBS.

Purity:
≥95% as determined by SDS-PAGE. Endotoxin content is <0.1 EU/µg purified protein as determined by LAL test.

Storage:
Store at -20°C. Aliquot solutions to avoid repeated freeze/thaw.

Applications and Suggested Dilutions:
- Inducing Apoptosis: Recombinant human TNF-α protein induces apoptosis in WEHI 164 and other TNF-α sensitive cells. Optimal concentration varies with cell type and should be determined by testing serial dilutions on cells. Exerts its biological activity in a concentration range of 0.1-1 ng/mL (WEHI 164 cells). ED_{50} is 0.1 ng/mL on WEHI 164 cells.

The optimal dilution for a specific application should be determined by the researcher.

Protocol:
Prepare a 1 mg/mL stock solution by dissolving the contents of the vial in 50 µL of sterile H_20. Further dilutions should be made with medium containing 5% fetal calf serum.

Limitations:
For *in vitro* research use only. Not for use in diagnostics or in humans.

Warranty:
No warranties, expressed or implied, are made regarding the use of this product. KAMIYA BIOMEDICAL COMPANY is not liable for any damage, personal injury, or economic loss caused by this product.