



Recombinant Human TNF- α Catalog Number: SJA03

Strength: 25 μ g

Specifications and Use

Source : Yeast.

Molecular Mass : Approximately 17.4kD.

Purity : \geq 97%, as determined by SDS-PAGE and HPLC method.

Endotoxin Level : \leq 1EU/ μ g, determined by the LAL method.

Biological Activity : Measured in a cell apoptosis assay using L929 cell line. Specific Activity shall be not less than 5 x10⁷ IU/mg.

Formulation : Sterile lyophilized powder, in PBS containing 0.1% HSA, pH7.4.

Reconstitution : It is recommended to reconstitute the lyophilized rHuTNF- α in sterile PBS not less than 100 μ g/ml, containing at least 0.1% human serum albumin or bovine serum albumin be added to the vial to prepare a stock solution.

Storage : Lyophilized samples are stable for greater than six months from date of receipt at -20°C to -70°C.

■ Upon reconstitution, this cytokine can be stored under sterile conditions at 2-8°C for one month or at -20°C to -70°C in a **manual defrost freezer** for three months without detectable loss of activity.

■ **Avoid repeated freeze-thaw cycles.**

Tumor necrosis factor alpha (TNF α), also known as cachectin and TNFSF1A, is the prototypic ligand of the TNF superfamily. It is a pleiotropic molecule that plays a central role in inflammation, apoptosis, and immune system development. TNF α is produced by a wide variety of immune and epithelial cell types. Human TNF α consists of a 35 amino acid (aa) cytoplasmic domain, a 21 aa transmembrane segment, and a 177 aa extracellular domain (ECD). Within the ECD, human TNF α shares 97% aa sequence identity with rhesus and 71% 92% with bovine, canine, cotton rat, equine, feline, mouse, porcine, and rat TNF α . The 26 kDa type 2 transmembrane protein is assembled intracellularly to form a noncovalently linked homotrimer. Ligation of this complex induces reverse signaling that promotes lymphocyte costimulation but diminishes monocyte responsiveness. Cleavage of membrane bound TNF α by TACE/ADAM17 releases a 55 kDa soluble trimeric form of TNF α . TNF α trimers bind the ubiquitous TNF RI and the hematopoietic cell restricted TNF RII, both of which are also expressed as homotrimers. TNF α regulates lymphoid tissue development through control of apoptosis. It also promotes inflammatory responses by inducing the activation of vascular endothelial cells and macrophages. TNF α is a key cytokine in the development of several inflammatory disorders. It contributes to the development of type 2 diabetes through its effects on insulin resistance and fatty acid metabolism.

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