

Animal-Free | Endotoxin-Free | Carrier-Free

TNF-alpha, human, recombinant

Catalog Number: IK2600

DESCRIPTION

Tumor necrosis factor alpha (TNF-alpha), a member of the TNF ligand superfamily, is among others, secreted by macrophages, activated monocytes, neutrophils, T-cells, B-cells and natural killer cells stimulated by bacterial lipopolysaccharides. TNF-alpha shows approximately 30% homology with TNF-beta. TNF-alpha plays an important role in the regulation of immune cells. TNF-alpha has many biological activities, including a cytotoxic effect to various tumor cells, causes inflammation, cellular proliferation and plays a critical role in mediating resistance to bacterial infections. Human and murine TNF-alpha show approximately 79% homology and human TNF-alpha is active on murine cells with a slightly reduced specific activity.

SOURCE

Produced in the endosperm tissue of barley grain (*Hordeum vulgare*). ISOkine® growth factors and cytokines are animal-free and serum-free and void of antibiotics, endotoxins, viruses, and prions.

FORMULATION

2xPBS pH 7.2, sterile filtered through 0.22 µm filter.

PURITY

> 95% by SDS-PAGE gel analysis.

SHELF LIFE

The lyophilized protein has a shelf life for 3 years when stored at < 20°C.

RECONSTITUTION

Always centrifuge the vial before opening. It is recommended to reconstitute the lyophilized protein in sterile buffered saline to a concentration of no less than 100 µg/ml. For long term storage of the reconstituted solution, it is recommended to add a carrier protein (0.1% HSA or BSA).

STABILITY

The lyophilized protein, though stable at room temperature for a few weeks, is best stored at -20°C. Reconstituted protein should be used immediately or stored in working aliquots at -20°C. Avoid repeated freeze-thaw cycles.

BIOLOGICAL ACTIVITY

Each batch of ISOkine® growth factors is tested for bioactivity and verified to have comparable activity to a commercial source. The bioactivity of ISOkine® recombinant human TNF-alpha is assayed by measuring its dose-dependent effect on the proliferation of actinomycin-D sensitized L929 cells. The ED50 for this effect using TNF-alpha is typically <0.4 ng/ml. Optimal concentration should be determined for specific applications and cell lines.

ENDOTOXIN LEVEL

Endotoxin level is < 0.0100 EU per µg of ISOkine® product by LAL method.

MAT ASSAY

Purified ISOkine® product carries no pyrogenic or pro-inflammatory contaminants, as assayed with monocyte activation test using Human 10-plex Cytokine Assay measuring IL-6, TNF-alpha and IL-1beta induction. (Ref. The Blood Bank, University Hospital of Iceland, Reykjavik, Iceland.)

MOLECULAR WEIGHT

Recombinant human TNF-alpha contains 157 amino acids and an N-terminal 16 amino acid histidine tag for a total length of 173 amino acids and has a predicted molecular mass of 18.2 kDa.

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