

bio-risk-free | not for human use | for research only | not for diagnostic or therapeutic use

TNF alpha, human, recombinant

Catalog Number: 01-AA040 LOT NUMBER: 01-0-004-7113 AVAILABLE SIZES: 10µg, 100µg, 1000µg

DESCRIPTION

TNF-alpha (Tumor necrosis factor, 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

ISOkine™ recombinant human TNF-alpha is produced in the endosperm tissue of barley grain (*Hordeum vulgare*).

FORMULATION

Sterile filtered through a 0.2 µm filter. Lyophilized from PBS, pH 7.2.

PURITY

Greater than 95% by SDS-PAGE gel analysis.

RECONSTITUTION

Note: Always centrifuge the vial before opening. It is recommended to reconstitute the lyophilized protein in sterile phosphate-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 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 factor is tested for bioactivity and verified to have comparable activity to a commercial source. The bioactivity of ISOkine™ recombinant human TNF-alpha was determined by its dose-dependent effects in a cytotoxicity assay using Actinomycin-D sensitized L929 cells. The ED50 for this effect is typically below 0.4 ng/ml corresponding to specific activity of > 2.5 x 10⁶ U/mg. Optimal concentration should be determined for specific applications and cell lines.

ENDOTOXIN LEVEL

Endotoxin level is less than 0.005ng per µg of ISOkine™ product (< 0.05EU/µg).

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 is a 19.6 kDa protein containing 158 amino acid residues and contains a 16 a.a. Histidine-based tag for a total length of 174 a.a. The recombinant protein migrates an apparent molecular mass of 24 kDa in SDS-PAGE.

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