

Recombinant Human TNF-alpha ACF

Catalog #	Product	Size
95117	Recombinant Human TNF-alpha ACF	10 µg

Intended Use

Recombinant Human TNF-alpha is a carrier-free, animal component-free bioactive recombinant cytokine intended for use in cell culture applications. TNF-alpha is a potent cytokine that is an important mediator of the body's response to infection, and promotes inflammation and tissue destruction in rheumatic/immune mediated diseases. TNF-alpha plays a central role in the initial host response to infection and granuloma formation.

Product Description

1. Synonyms

TNFSF2, Cachectin, DIF, Necrosin, Cytotoxin, Cachexin, TNF, TNF- α

2. Accession Number

P01375

3. Background

Tumor necrosis factor-alpha (TNF-alpha) is a pleiotropic inflammatory cytokine produced predominantly by inflammatory monocytes and macrophages, but other cell types, including neutrophils, endothelial cells, lymphocytes, and activated tissue cells, can also be a source during overwhelming inflammatory responses. TNF-alpha has both beneficial and destructive properties for the central nervous system and affects lipid metabolism, coagulation, and endothelial function. The increasing release of TNF-alpha may contribute to the odds of ischemic stroke in patients. TNF-alpha is a primary mediator of numerous immunologic functions, which include stimulating phagocytosis in macrophages, chemoattraction of neutrophils, increased insulin resistance, and inducing fever. As a central player in the cytokine network, TNF-alpha has been implicated in a variety of disease states, including cachexia, septic shock, acute respiratory distress syndrome, and a number of necrotic, proliferative and autoimmune diseases. TNF-alpha activates signals through two receptors, TNFR1, which is expressed on most cell types, and TNFR2, which is expressed mainly on immune cells. TNF-alpha exists in both secreted and membrane bound forms, both bioactive (1-5). Recombinant Human TNF-alpha is a non-glycosylated protein, containing 158 amino acids, with a molecular weight of 17.5 kDa.

4. Specifications

Formulation

Recombinant Human TNF-alpha is lyophilized from a concentrated solution (1mg/mL) with 10 mM Na₂PO₄, pH 8.0.

Protein Content and Purity

≥ 96% determined by reducing and non-reducing SDS-PAGE analysis.

Bioactivity

ED50 is determined by the cytolysis of mouse L929 cells in the presence of Actinomycin D. The ED50 is typically less than 0.8ng/mL.

Quality and Grade

Carrier-free. Animal component-free.

Quality Assurance

All quality control test results are reported on a lot specific Certificate of Analysis which is available upon request.

Shipping

This product is shipped at ambient temperature. Immediately upon receipt, store at the recommended temperature below.

Storage Instructions and Stability

Upon receipt, store the lyophilized protein at or below -10°C in a manual defrost freezer for up to 12 months from date of receipt. Unopened vials are stable for one year from the date of receipt when stored as recommended. Reconstituted material should be apportioned in working volumes and stored at or below -10°C in manual defrost freezer. Reconstituted material is stable for 4-6 weeks when stored at or below -10°C and for 3-12 months at -80°C . Stability can be increased by adding at least 0.1% of carrier protein.

Precautions

This product is for research or further manufacturing use only. It is not for use in diagnostic procedures. The safety and efficacy of this product in diagnostic or other clinical procedures has not been established.

Directions for Use

1. Reconstitution

Centrifuge vials before opening. When reconstituting the product, gently pipet and wash down the sides of the vial to ensure full recovery of the protein into solution. It is recommended to reconstitute the lyophilized product with sterile water at a concentration of 0.1 mg/mL, which can be further diluted into other aqueous solutions.

2. Optimum concentration

The optimum concentration varies depending on cell type and culture conditions. Working concentration should be determined for each specific application.

References

1. Szabo G (1999) Consequences of alcohol consumption on host defense. *Alcohol and Alcoholism* 34(6): 830-841
2. Hoppe C, Klitz W, D'Harlingue K, Cheng S, Grow M, Steiner L, Noble J, Adams R, Styles L (2007) Confirmation of an association between the TNF(-308) promoter polymorphism and stroke risk in children with sickle cell anemia. *Stroke* 38: 2241-2246

3. Barone FC, Arvin B, White RF, Miller A, Webb CL, Willette RN, Lysko PG, Feuerstein GZ (1997) Tumor necrosis factor- α . A mediator of focal ischemic brain injury. *Stroke* 28: 1233–1244
4. MacEwan DJ (2002) TNF ligands and receptors – a matter of life and death. *Br. J. Pharmacol.* 135(4): 855-875
5. Hlodan R, Pain RH. (1995) The folding and assembly pathway of TNF α , a globular trimeric protein. *Eur. J. Biochem.* 231: 381–387

Technical Support

CONTACT US

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WEBSITE RESOURCES

Visit the website at www.irvinesci.com for technical resources and information including:

- Safety Data Sheets (SDS)
- Certificate of Analysis (CoA) (when available)
- FAQs
- Product literature
- Complete list of offices and contact information by country

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