

Revision 1

Store at -20C
#16769

Human TNF- α Recombinant Protein

10 μ g**Orders:** 877-616-CELL (2355)
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MW (kDa):
17.5**UniProt ID:**
P01375**Entrez-Gene Id:**
7124

Background

TNF- α , the prototypical member of the TNF protein superfamily, is a homotrimeric type-II membrane protein (1,2). Membrane bound TNF- α is cleaved by the metalloprotease TACE/ADAM17 to generate a soluble homotrimer (2). Both membrane and soluble forms of TNF- α are biologically active. TNF- α is produced by a variety of immune cells, including T cells, B cells, NK cells, and macrophages (1). Cellular response to TNF- α is mediated through interaction with receptors TNF-R1 and TNF-R2 and results in activation of pathways that favor both cell survival and apoptosis depending on the cell type and biological context. Activation of kinase pathways (including JNK, ERK (p44/42), p38 MAPK, and NF- κ B) promotes the survival of cells, while TNF- α -mediated activation of caspase-8 leads to programmed cell death (1,2). TNF- α plays a key regulatory role in inflammation and host defense against bacterial infection, notably *Mycobacterium tuberculosis* (3). The role of TNF- α in autoimmunity is underscored by blocking TNF- α action to treat rheumatoid arthritis and Crohn's disease (1,2,4).

Endotoxin

Endotoxin levels are less than or equal to 1 EU / 1 μ g hTNF- α .

Purity

A greater than or equal to 95% purity was determined by SDS-PAGE.

Source / Purification

Recombinant human TNF- α was expressed in *E. coli* and is supplied in a lyophilized form.

Bioactivity

The bioactivity of recombinant hTNF- α was determined in a cell proliferation assay measuring the cytotoxicity of mouse L929 cells in the presence of Actinomycin D. The ED₅₀ of each lot is less than or equal to 2 ng/mL.

Storage

Human TNF- α Recombinant Protein is supplied as lyophilized material that is very stable at -20°C. It is recommended to reconstitute with sterile water at a concentration of 0.1 mg/mL which can be further diluted in aqueous solutions as needed. Addition of a carrier protein (0.1% HSA or BSA) is recommended for long-term storage.

Background References

1. Aggarwal, B.B. (2003) *Nat Rev Immunol* 3, 745-56.
2. Hehlhans, T. and Pfeffer, K. (2005) *Immunology* 115, 1-20.
3. Lin, P.L. et al. (2007) *J Invest Dermatol Symp Proc* 12, 22-5.
4. Brennan, F.M. and McInnes, I.B. (2008) *J Clin Invest* 118, 3537-45.

APPLICATIONS KEY

CROSS-REACTIVITY KEY H: human M: mouse R: rat Hm: hamster Mk: monkey Vir: virus Mi: mink C: chicken Dm: D. melanogaster X: Xenopus Z: zebrafish B: bovine Dg: dog Pg: pig Sc: S. cerevisiae Ce: C. elegans Hr: horse Rb: rabbit All: all species expected

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