Revision 5

Store at -20C

#8902

Human Tumor Necrosis Factor-α (hTNF-α)

Cell Signaling TECHNOLOGY®

Orders: 877-616-CELL (2355)
orders@cellsignal.com

Support: 877-678-TECH (8324)

Web: info@cellsignal.com
cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

For Research Use Only. Not for Use in Diagnostic Procedures.

MW (kDa):	UniProt ID:	Entrez-Gene Id:
18	#P01375	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-κB) 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

Less than 0.01 ng endotoxin/1 µg hTNF-α.

Purity

>98% as determined by SDS-PAGE of 6 µg reduced (+) and non-reduced (-) recombinant hTNF-α. All lots are greater than 98% pure.

Source / Purification

Recombinant human TNF-α (hTNF-α) Val77-Leu233 (Accession #HUMTNFAB) was produced in *E. coli* at Cell Signaling Technology.

Bioactivity

The bioactivity of hTNF-α was determined in an L-929 cell viability assay. The ED_{50} of each lot is between 10-500 pg/ml.

Background References

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

Trademarks and Patents

Limited Uses

respect to any third party products or services used by Customer in connection with the Products.