

Store at +4C
#8668**SignalKine™ Human TNF-α
Chemiluminescent Sandwich ELISA Kit****Orders:** 877-616-CELL (2355)
orders@cellsignal.com**Support:** 877-678-TECH (8324)**Web:** info@cellsignal.com
cellsignal.com**Species Cross Reactivity:** H
UniProt ID: #P01375
Entrez-Gene ID: #7124

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

Product Includes	Product #	Quantity	Color	Storage Temp
ELISA Wash Buffer (20X)	9801	25 ml	Colorless	+4C
Luminol/Enhancer Solution	84850	3 ml	Colorless	RT
Stable Peroxide Buffer	42552	3 ml	Colorless	RT
Sealing Tape	54503	2 ea		+4C

Description

SignalKine™ Human TNF-α Chemiluminescent Sandwich ELISA Kit from Cell Signaling Technology (CST) is a solid phase sandwich enzyme-linked immunosorbent assay (ELISA) that detects human TNF-α (hTNF-α) in multiple matrices. Unknown samples being tested for hTNF-α and hTNF-α standards are added to low volume microwells, where the hTNF-α is captured by the coated hTNF-α Rabbit mAb. Following a washing step, a biotinylated hTNF-α Detection Rabbit mAb is added to detect the captured hTNF-α. HRP-linked Streptavidin is then used for detection of the biotinylated hTNF-α Detection Rabbit mAb. A chemiluminescent reagent is added for signal development. The magnitude of light emission, measured in relative light units (RLU) is proportional to the quantity of hTNF-α in the sample. SignalKine™ Human TNF-α Chemiluminescent Sandwich ELISA Kit detects hTNF-α in multiple matrices that can be quantified by generating a standard curve with the recombinant hTNF-α protein standard provided. The hTNF-α standard range is from 2.4 to 10,000 pg/ml. Samples containing higher levels of hTNF-α can be diluted to fit into the standards range.

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, Erk1/2, 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).

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 Investig Dermatol Symp Proc* 12, 22-5.

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Revision 1

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