

Tumor Necrosis Factor alpha ELISA Kit | TNF-a elisa kit

Tumor Necrosis Factor alpha (TNF-a)

CATALOG #
AAA77862

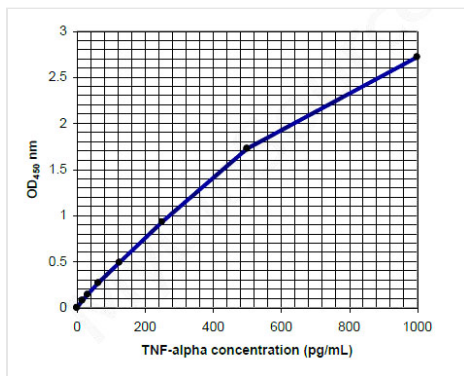
PRODUCT SYNONYMS

Tumor Necrosis Factor alpha; Tumor Necrosis Factor alpha (TNF-a); Tumor Necrosis Factor alpha (TNF-alpha); TNF-a elisa kit

PRODUCT SPECIFICATIONS

Specificity	This sandwich ELISA recognises both natural and recombinant human TNF-alpha. This kit exhibits no significant cross-reactivity with human TGF, MCP-1, MCP-3, M-CSF, GM-CSF, EGF, IL-1beta, IL-8, and IL-16.
Sequence Length	233
Assay Type	Quantitative Sandwich
Samples	Cell culture supernatant, serum, plasma, and other biological fluids
Sensitivity	2.4pg/mL
Intra-assay Precision	To determine within-run precision, three different samples of known concentration were assayed by replicates of twenty in 1 assay.
Inter-assay Precision	To determine between-run precision, three different samples of known concentration were assayed by replicates on 20 different assays.

IMAGES



Standard Curve (Sample)

ADDITIONAL INFORMATION

Related Product Information for TNF-alpha elisa kit	Background: Tumour Necrosis Factor alpha (TNF-alpha), also known as cachectin was initially named for its remarkable ability to cause hemorrhagic necrosis of tumours in mice.¹ The TNF-alpha gene located on chromosome 6 encodes a 233 amino acid (a.a.) prohormone bound to the plasma membrane, with the mature form (157a.a., 17kDa) exposed on the extracellular surface. Soluble, mature TNF-alpha is released upon cleavage of the C-terminal.^{2,3} The primary source in vivo of TNF-alpha is thought to be the monocyte/macrophage but various cell types are known to express this cytokine such as lymphocytes, basophils, eosinophils, mast cells, NK cells, T cells, B cells, keratinocytes, Kupffer cells, astrocytes, and some types of tumours. TNF-alpha is produced upon stimulation with cytokines such as IL-1, 1L-2, GM-CSF, TNF-alpha itself and with bacterial lipopolysaccharide (LPS) which is a potent inducer.⁴ TNF-alpha once produced and secreted will bind to TNF-alpha receptors (TNF-alpha R1, 55 kDa and TNF-alpha R2, 75 kDa), located on the plasma membrane of most cells throughout the body except the red blood cell.⁵ The two TNF-alpha receptors deliberate the biological effects of TNF-alpha. It has been reported that TNF-alpha R1 is responsible for mediating LPS toxicity⁶ and cell cytotoxicity⁷ and TNF-alpha R2 is involved in cellular proliferation.⁸ Various pathological conditions are associated with the production of high levels of TNF-alpha. These include septic shock syndrome, cachexia (e.g. HIV, tuberculosis, cancer), autoimmune diseases, hepatitis, leukemia, myocardial ischaemia, organ transplantation rejection, multiple sclerosis, rheumatoid arthritis, and meningococcal septicemia.^{4,9,10,11} Many people die annually from a complication of infectious disease called septic shock syndrome which is triggered by TNF-alpha. In many cases elevated TNF-alpha serum levels predict a higher mortality.¹² TNF-alpha is a pleiotropic cytokine that can induce disease through TNF-alpha toxicity (tissue injury, catabolic illness, and mediating shock) and improve host defense mechanisms (stimulating inflammation and increasing immune cell function).⁴ In the future, therapies may be developed by blocking TNF-alpha harmful effects and enhancing TNF-alpha beneficial effects. Principle of the Assay: This TNF-alpha enzyme linked immunosorbent assay (ELISA) applies a technique called a quantitative sandwich immunoassay. The microtiter plate provided in this kit has been pre-coated with a monoclonal antibody specific to TNF-alpha. Standards or samples are then added to the appropriate microtiter plate wells with a biotin-conjugated monoclonal antibody preparation specific for TNF-alpha and incubated. TNF-alpha, if present, will bind and become immobilized by the antibody pre-coated on the wells and then be "sandwiched" by biotin conjugate. The microtiter plate wells are thoroughly washed to remove unbound TNF-alpha and other components of the sample. In order to quantify the amount of TNF-alpha present in the sample, Avidin conjugated to Horseradish Peroxidase (HRP) is added to each microplate well and incubated. Avidin is a tetramer containing four identical subunits that each has a high affinity-binding site for biotin. The wells are thoroughly washed to remove all unbound HRP-conjugated Avidin and a TMB (3,3',5,5' tetramethyl-benzidine) substrate solution is added to each well. The enzyme (HRP) and substrate are allowed to react over a short incubation period. Only those wells that contain TNF-alpha, biotin-conjugated antibody, and enzyme-conjugated Avidin will exhibit a change in colour. The enzyme-substrate reaction is terminated by the addition of a sulphuric acid solution and the colour change is measured spectrophotometrically at a wavelength of 450 nm ± 2 nm. In order to measure the concentration of TNF-alpha in the samples, this kit includes two calibration diluents (Calibrator Diluent I for serum/plasma testing and Calibrator Diluent II for cell culture supernatant testing.) According to the testing system, the provided standard is diluted (2-fold) with the appropriate Calibrator Diluent and assayed at the same time as the samples. This allows the operator to produce a standard curve of Optical Density (O.D) versus TNF-alpha concentration (pg/mL). The concentration of TNF-alpha in the samples is then determined by comparing the O.D. of the samples to the standard curve. Intended Uses: This Human TNF-alpha (alpha) ELISA Kit is to be used for the in vitro quantitative determination of human tumour necrosis factor alpha (TNF-alpha) concentrations in cell culture supernatant, serum, plasma, and other biological fluids. This kit is intended FOR LABORATORY RESEARCH USE ONLY and not for use in test or therapeutic procedures.
Product Categories/Family for TNF-alpha elisa kit	ELISA Kits for Human Cytokines and Receptors

NCBI AND UNIPROT INFORMATION

NCBI GI #	37210
NCBI GeneID	7124
UniProt Accession #	P01375; O43647; Q9P1Q2; Q9UIV3
Molecular Weight	25,644 Da
NCBI Official Full Name	TNF-alpha

NCBI Official Synonym Full Names	tumor necrosis factor
NCBI Official Symbol	TNF
NCBI Official Synonym Symbols	DIF; TNFA; TNFSF2; TNF-alpha
NCBI Protein Information	tumor necrosis factor; APC1 protein; TNF, macrophage-derived; TNF, monocyte-derived; TNF-a; cachectin; tumor necrosis factor ligand superfamily member 2; tumor necrosis factor-alpha
UniProt Protein Name	Tumor necrosis factor
UniProt Gene Name	TNF
UniProt Entry Name	TNFA_HUMAN

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

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Online datasheet: <https://www.aaabiotech.com/tnf-a-elisa-kits/tumor-necrosis-factor-alpha/77862>