

Datasheet for ABIN1672752

TNF alpha ELISA Kit



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Overview

Quantity:	96 tests
Target:	TNF alpha
Binding Specificity:	AA 80-235
Reactivity:	Rat
Method Type:	Sandwich ELISA
Detection Range:	15.6-1000 pg/mL
Minimum Detection Limit:	15.6 pg/mL
Application:	ELISA

Product Details

Purpose:	Sandwich High Sensitivity ELISA kit for Quantitative Detection of Rat TNF alpha
Brand:	PicoKine™
Sample Type:	Cell Culture Supernatant, Serum, Plasma (heparin), Plasma (EDTA)
Analytical Method:	Quantitative
Detection Method:	Colorimetric
Immunogen:	Expression system for standard: E.coli Immunogen sequence: L80-L235
Specificity:	Expression system for standard: E.coli,L80-L235
Cross-Reactivity (Details):	There is no detectable cross-reactivity with other relevant proteins.
Sensitivity:	<1pg/mL

Product Details

Material not included:	Microplate reader in standard size. Automated plate washer. Adjustable pipettes and pipette tips. Multichannel pipettes are recommended in the condition of large amount of samples in the detection. Clean tubes and Eppendorf tubes. Washing buffer (neutral PBS or TBS). Preparation of 0.01M TBS: Add 1.2g Tris, 8.5g NaCl
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Target Details

Target:	TNF alpha
Alternative Name:	TNF (TNF alpha Products)
Background:	<p>Protein Function: Cytokine that binds to TNFRSF1A/TNFR1 and TNFRSF1B/TNFR. It is mainly secreted by macrophages and can induce cell death of certain tumor cell lines. It is potent pyrogen causing fever by direct action or by stimulation of interleukin-1 secretion and is implicated in the induction of cachexia, Under certain conditions it can stimulate cell proliferation and induce cell differentiation.</p> <p>Background: Tumor necrosis factor-alpha(TNF-alpha, or TNF) is secreted by macrophages in response to inflammation, infection and cancer. Human Tumor Necrosis Factor(TNF) and Lymphotoxin(TNF-beta) are cytotoxic proteins which have similar biological activities and share 30 % amino acid homology. TNF-alpha is produced by monocytes, which can stimulate endothelial cells to produce the multilineage growth factor granulocyte-macrophage colony-stimulating factor and extend the role of this immunoregulatory protein to the regulation of hematopoiesis in vitro. TNF is a soluble protein that causes damage to tumor cells but has no effect on normal cells. Human TNF has been purified to apparent homogeneity as a 17.3-kilodalton protein from HL-60 leukemia cells and has showed cytotoxic and cytostatic activities against various human tumor cell lines. The human TNF cDNA is 1585 base pairs in length and encodes a protein of 233 amino acids. The mature protein begins at residue 77, leaving a long leader sequence of 76 amino acids. TNF-alpha has been mapped to human chromosome 6. The standard product used in this kit is recombinant rat TNFalpha, consisting of 157 amino acids with the molecular mass of 17KDa.</p> <p>Synonyms: Tumor necrosis factor,Cachectin,TNF-alpha,Tumor necrosis factor ligand superfamily member 2,TNF-a,Tumor necrosis factor, membrane form,N-terminal fragment,NTF,Intracellular domain 1,ICD1,Intracellular domain 2,ICD2,C-domain 1,C-domain 2,Tumor necrosis factor, soluble form,Tnf,Tnfa, Tnfsf2,</p> <p>Full Gene Name: Tumor necrosis factor</p> <p>Cellular Localisation: Cell membrane, Single-pass type II membrane protein.</p>
Gene ID:	24835

Target Details

UniProt:	P16599
Pathways:	NF-kappaB Signaling, Apoptosis, Caspase Cascade in Apoptosis, TLR Signaling, Cellular Response to Molecule of Bacterial Origin, Regulation of Leukocyte Mediated Immunity, Positive Regulation of Immune Effector Process, Production of Molecular Mediator of Immune Response, Positive Regulation of Endopeptidase Activity, Hepatitis C, Protein targeting to Nucleus, Inflammasome

Application Details

Application Notes:	Before using Kit, spin tubes and bring down all components to bottom of tube. Duplicate well assay was recommended for both standard and sample testing.
Plate:	Pre-coated
Protocol:	rat TNF alpha ELISA Kit was based on standard sandwich enzyme-linked immune-sorbent assay technology. A monoclonal antibody from mouse specific for TNF alpha has been precoated onto 96-well plates. Standards (E.coli,L80-L235) and test samples are added to the wells, a biotinylated detection polyclonal antibody from goat specific for TNF alpha is added subsequently and then followed by washing with PBS or TBS buffer. Avidin-Biotin-Peroxidase Complex was added and unbound conjugates were washed away with PBS or TBS buffer. HRP substrate TMB was used to visualize HRP enzymatic reaction. TMB was catalyzed by HRP to produce a blue color product that changed into yellow after adding acidic stop solution. The density of yellow is proportional to the rat TNF alpha amount of sample captured in plate.
Assay Procedure:	Aliquot 0.1 mL per well of the 1000pg/mL, 500pg/mL, 250pg/mL, 125pg/mL, 62.5pg/mL, 31.2pg/mL, 15.6pg/mL rat TNF alpha standard solutions into the precoated 96-well plate. Add 0.1 mL of the sample diluent buffer into the control well (Zero well). Add 0.1 mL of each properly diluted sample of rat cell culture supernates, serum or plasma(heparin , EDTA) to each empty well. See "Sample Dilution Guideline" above for details. It is recommended that each rat TNF alpha standard solution and each sample be measured in duplicate.
Assay Precision:	<ul style="list-style-type: none">• Sample 1: n=16, Mean(pg/ml): 90, Standard deviation: 5.3, CV(%): 5.3• Sample 2: n=16, Mean(pg/ml): 245, Standard deviation: 3.1, CV(%): 3.1• Sample 3: n=16, Mean(pg/ml): 612, Standard deviation: 3.4, CV(%): 3.4,• Sample 1: n=24, Mean(pg/ml): 103, Standard deviation: 6.9, CV(%): 6.7• Sample 2: n=24, Mean(pg/ml): 261, Standard deviation: 15.4, CV(%): 5.9• Sample 3: n=24, Mean(pg/ml): 684, Standard deviation: 44.5, CV(%): 6.5
Restrictions:	For Research Use only

Handling

Handling Advice:	Avoid multiple freeze-thaw cycles.
Storage:	-20 °C, 4 °C
Storage Comment:	Store at 4°C for 6 months, at -20°C for 12 months. Avoid multiple freeze-thaw cycles
Expiry Date:	12 months

Publications

Product cited in: Wang, Fu, Yu, Li, Wang, Liu, Zhang, Han, Zhou, Wang: "Preconditioning with VEGF Enhances Angiogenic and Neuroprotective Effects of Bone Marrow Mononuclear Cell Transplantation in a Rat Model of Chronic Cerebral Hypoperfusion." in: **Molecular neurobiology**, Vol. 53, Issue 9, pp. 6057-6068, (2018) ([PubMed](#)).

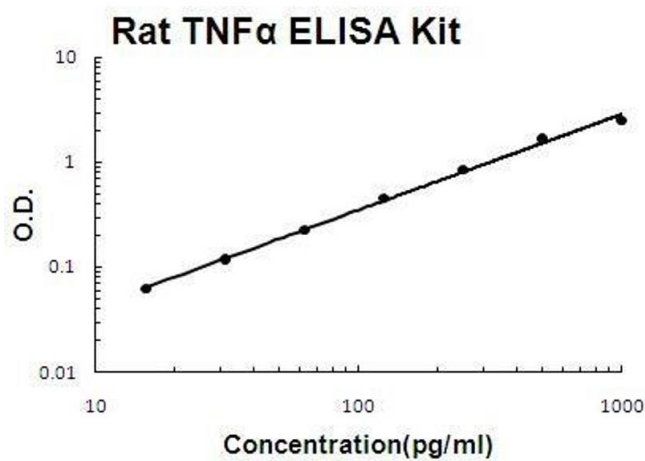
Wang, Mao, Yang, Zou, Liu, Liu, Zhang, Xiao, Wang: "Resveratrol protects against early polymicrobial sepsis-induced acute kidney injury through inhibiting endoplasmic reticulum stress-activated NF-κB pathway." in: **Oncotarget**, Vol. 8, Issue 22, pp. 36449-36461, (2018) ([PubMed](#)).

Piao, Liu, Guo, Meng, Gao: "Picroside II Shows Protective Functions for Severe Acute Pancreatitis in Rats by Preventing NF-κB-Dependent Autophagy." in: **Oxidative medicine and cellular longevity**, Vol. 2017, pp. 7085709, (2018) ([PubMed](#)).

Chen, Wu, Chen, Xie, Fang, Hu, Chen, Fu, He: "Omega-3 polyunsaturated fatty acid supplementation attenuates microglial-induced inflammation by inhibiting the HMGB1/TLR4/NF-κB pathway following experimental traumatic brain injury." in: **Journal of neuroinflammation**, Vol. 14, Issue 1, pp. 143, (2018) ([PubMed](#)).

Xiong, Ru, Chen, Tian, Li: "Mitochondrial dysfunction and inflammatory response in the cytotoxicity of NR8383 macrophages induced by fine particulate matter." in: **Environmental toxicology and pharmacology**, Vol. 55, pp. 1-7, (2018) ([PubMed](#)).

There are more publications referencing this product on: [Product page](#)



ELISA

Image 1. Rat TNF alpha PicoKine ELISA Kit standard curve