

## Product datasheet

# Mouse TNF alpha ELISA Kit ab208348

Recombinant SimpleStep ELISA

★★★★☆ 4 Abreviews 83 References 12 Images

### Overview

**Product name** Mouse TNF alpha ELISA Kit

**Detection method** Colorimetric

#### Precision

Intra-assay

Sample	n	Mean	SD	CV%
Overall	8			6.7%

Inter-assay

Sample	n	Mean	SD	CV%
Overall	3			9.8%

**Sample type**

Cell culture supernatant, Serum, Hep Plasma, EDTA Plasma, Cit plasma

**Assay type**

Sandwich (quantitative)

**Sensitivity**

9.1 pg/ml

**Range**

46.88 pg/ml - 3000 pg/ml

#### Recovery

Sample specific recovery

Sample type	Average %	Range
Serum	97	85% - 115%
Cell culture media	111	109% - 115%
Hep Plasma	92	85% - 103%
EDTA Plasma	99	98% - 101%
Cit plasma	87	85% - 88%

**Assay time**

1h 30m

**Assay duration**

One step assay

## Species reactivity

## Product overview

### Reacts with: Mouse

Mouse TNF alpha ELISA Kit (ab208348) is a single-wash 90 min sandwich ELISA designed for the quantitative measurement of TNF alpha protein in cell culture supernatant, serum, cit plasma, edta plasma, and hep plasma. It uses our proprietary SimpleStep ELISA® technology. Quantitate Mouse TNF alpha with 9.1 pg/ml sensitivity.

SimpleStep ELISA® technology employs capture antibodies conjugated to an affinity tag that is recognized by the monoclonal antibody used to coat our SimpleStep ELISA® plates. This approach to sandwich ELISA allows the formation of the antibody-analyte sandwich complex in a single step, significantly reducing assay time. See the SimpleStep ELISA® protocol summary in the image section for further details. Our SimpleStep ELISA® technology provides several benefits:

- Single-wash protocol reduces assay time to 90 minutes or less
- High sensitivity, specificity and reproducibility from superior antibodies
- Fully validated in biological samples
- 96-wells plate breakable into 12 x 8 wells strips

A 384-well SimpleStep ELISA® microplate ([ab203359](#)) is available to use as an alternative to the 96-well microplate provided with SimpleStep ELISA® kits.

## ASSAY SPECIFICITY

This kit recognizes both native and recombinant mouse TNF alpha protein in serum, plasma, and cell culture supernatant samples only.

## CROSS REACTIVITY

Recombinant mouse TNF RI, TNF RII, OPG, CD40 receptor, IL1 beta, IL-16, and IL-5 were prepared at 100 ng/mL and assayed for cross reactivity. No cross-reactivity was observed.

Recombinant human TNF alpha was prepared at 100 ng/mL, 25 ng/mL, and 3 ng/mL and assayed for cross reactivity. On average, 3.0% cross-reactivity was observed with a standard deviation of 0.7%.

## INTERFERENCE

Recombinant mouse TNF RI, TNF RII, OPG, CD40 receptor, IL1 beta, IL-16, and IL-5 and recombinant human TNF alpha were prepared at 100 ng/mL and tested for interference. No interference with was observed.

## SPECIES REACTIVITY

This kit recognizes mouse TNF alpha protein.

## CALIBRATION

This immunoassay is calibrated against a highly purified mouse TNF alpha. The NIBSC/WHO unclassified purified mouse TNF alpha preparation 88/532 was evaluated in this kit.

The dose response curve of the unclassified standard 88/532 parallels the SimpleStep standard curve. To convert sample values obtained with the SimpleStep mouse TNF alpha kit to approximate NIBSC 88/532 units, use the equation below.

NIBSC (88/532) approximate value (units/mL) = 2.0 x SimpleStep mouse TNF alpha value (pg/mL)

**Notes**

Tumor necrosis factor, or TNF alpha, is a cytokine that binds to TNFRSF1A/TNFR1 and TNFRSF1B/TNFR2. Furthermore, TNF alpha is a ligand of the TNF superfamily which plays a central role in inflammation, apoptosis, proliferation, invasion, angiogenesis, metastasis, and morphogenesis. It is mainly secreted by macrophages, and can induce cell death of certain tumor cell lines. Rat and Human TNF alpha are 95% and 79% identical to Mouse TNF alpha, respectively.

TNF alpha is expressed on macrophages and endothelial, epithelial, and tumor cells as a 26 kDa transmembrane protein. TNF-alpha is cleaved by proteolytic processing into six chains: (1) TNF membrane form, (2) Intracellular domain 1 (ICD1), (3) Intracellular domain 2 (ICD2), (4) C-domain 1, (5) C-domain 2 and (6) TNF soluble form. ICD1 and ICD2 are released into the cytosol, while C-domain 1 and C-domain 2 are released into the extracellular space. Furthermore, the membrane form, but not the soluble form, is phosphorylated on serine residues. Dephosphorylation of the membrane form occurs by binding to soluble TNFRSF1A/TNFR1.

Signaling from TNF-alpha differs depending on the type of ligand initiating the signaling event (intracellular, membrane, or soluble). As an example, the membrane form of TNF-alpha appears to mediate anti-tumorigenic therapeutic responses whereas the soluble ligand is linked to inflammation and proliferation. Likewise, the TNF intracellular domain (ICD) form induces IL-12 production in dendritic cells.

**Platform** Pre-coated microplate (12 x 8 well strips)

## Properties

**Storage instructions** Store at +4°C. Please refer to protocols.

Components	1 x 96 tests
10X Mouse TNF alpha Capture Antibody	1 x 600µl
10X Mouse TNF alpha Detector Antibody	1 x 600µl
10X Wash Buffer PT (ab206977)	1 x 20ml
Antibody Diluent CPI - HAMA Blocker (ab193969)	1 x 6ml
Mouse TNF alpha Lyophilized Recombinant Protein	2 vials
Plate Seals	1 unit

Components	1 x 96 tests
Sample Diluent NBS	1 x 20ml
Sample Diluent NS (ab193972)	1 x 50ml
SimpleStep Pre-Coated 96-Well Microplate (ab206978)	1 unit
Stop Solution	1 x 12ml
TMB Development Solution	1 x 12ml

**Function** Cytokine that binds to TNFRSF1A/TNFR1 and TNFRSF1B/TNFR2. 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.

**Involvement in disease** Genetic variations in TNF are a cause of susceptibility psoriatic arthritis (PSORAS) [MIM:607507]. PSORAS is an inflammatory, seronegative arthritis associated with psoriasis. It is a heterogeneous disorder ranging from a mild, non-destructive disease to a severe, progressive, erosive arthropathy. Five types of psoriatic arthritis have been defined: asymmetrical oligoarthritis characterized by primary involvement of the small joints of the fingers or toes; asymmetrical arthritis which involves the joints of the extremities; symmetrical polyarthritis characterized by a rheumatoidlike pattern that can involve hands, wrists, ankles, and feet; arthritis mutilans, which is a rare but deforming and destructive condition; arthritis of the sacroiliac joints and spine (psoriatic spondylitis).

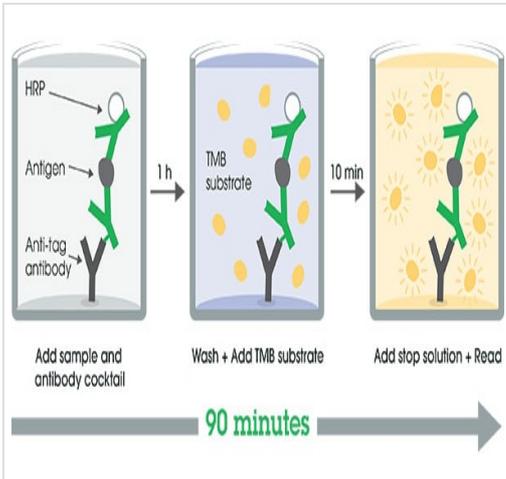
**Sequence similarities** Belongs to the tumor necrosis factor family.

**Post-translational modifications** The soluble form derives from the membrane form by proteolytic processing. The membrane form, but not the soluble form, is phosphorylated on serine residues. Dephosphorylation of the membrane form occurs by binding to soluble TNFRSF1A/TNFR1. O-glycosylated; glycans contain galactose, N-acetylgalactosamine and N-acetylneuraminic acid.

**Cellular localization** Secreted and Cell membrane.

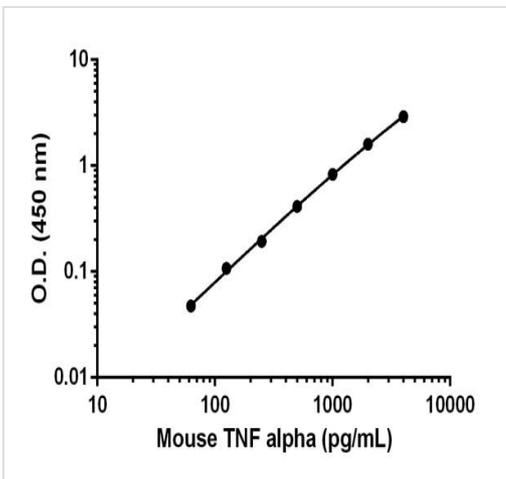
---

## Images



Other - Mouse TNF alpha ELISA Kit (ab208348)

SimpleStep ELISA technology allows the formation of the antibody-antigen complex in one single step, reducing assay time to 90 minutes. Add samples or standards and antibody mix to wells all at once, incubate, wash, and add your final substrate. See protocol for a detailed step-by-step guide.



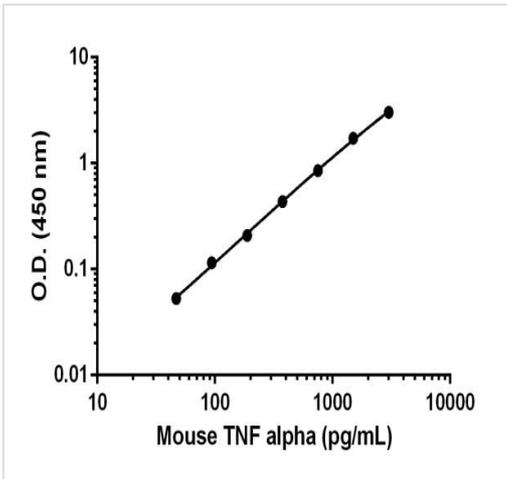
Example of mouse TNF alpha standard curve in Sample Diluent 25BS

Background-subtracted data values (mean +/- SD) are graphed.

Standard Curve Measurements			
Conc. (pg/mL)	O.D. 450 nm		Mean O.D.
	1	2	
0	0.054	0.066	0.060
62.5	0.107	0.107	0.107
125	0.172	0.163	0.167
250	0.257	0.250	0.253
500	0.481	0.468	0.474
1,000	0.904	0.879	0.891
2,000	1.693	1.633	1.663
4,000	3.001	2.924	2.962

Example of mouse TNF alpha standard curve in Sample Diluent 25BS.

The TNF alpha standard curve was prepared as described. Raw data values are shown in the table. Background-subtracted data values (mean +/- SD) are graphed.



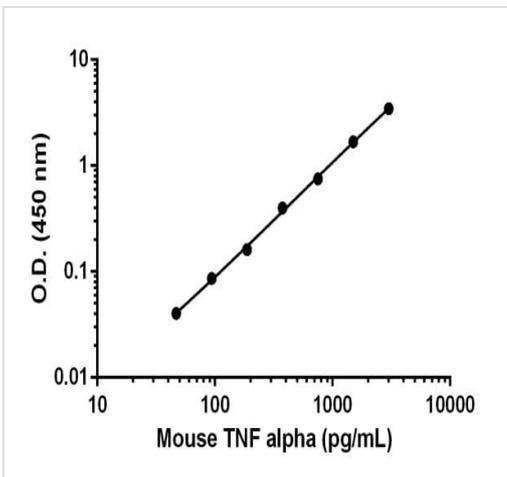
Example of mouse TNF alpha standard curve in Sample Diluent 10BS

Background-subtracted data values (mean +/- SD) are graphed.

Standard Curve Measurements			
Conc. (pg/mL)	O.D. 450 nm		Mean O.D.
	1	2	
0	0.088	0.070	0.079
46.88	0.132	0.132	0.132
93.75	0.187	0.202	0.194
187.5	0.280	0.293	0.287
375	0.519	0.511	0.515
750	0.934	0.935	0.935
1,500	1.797	1.806	1.801
3,000	3.098	3.116	3.107

Example of mouse TNF alpha standard curve in Sample Diluent 10BS.

The TNF alpha standard curve was prepared as described. Raw data values are shown in the table. Background-subtracted data values (mean +/- SD) are graphed.



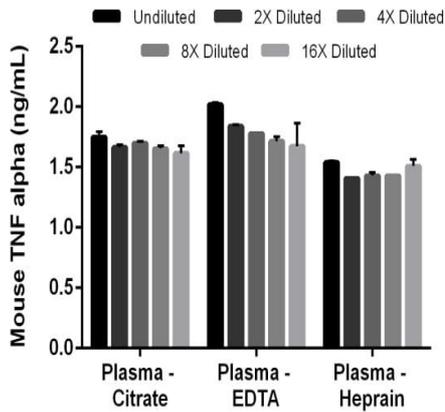
Example of mouse TNF alpha standard curve in Sample Diluent NS

Background-subtracted data values (mean +/- SD) are graphed.

Standard Curve Measurements			
Conc. (pg/mL)	O.D. 450 nm		Mean O.D.
	1	2	
0	0.070	0.076	0.073
46.88	0.131	0.132	0.132
93.75	0.198	0.183	0.191
187.5	0.306	0.309	0.308
375	0.520	0.537	0.529
750	0.965	0.963	0.964
1,500	1.840	1.821	1.830
3,000	3.046	3.134	3.090

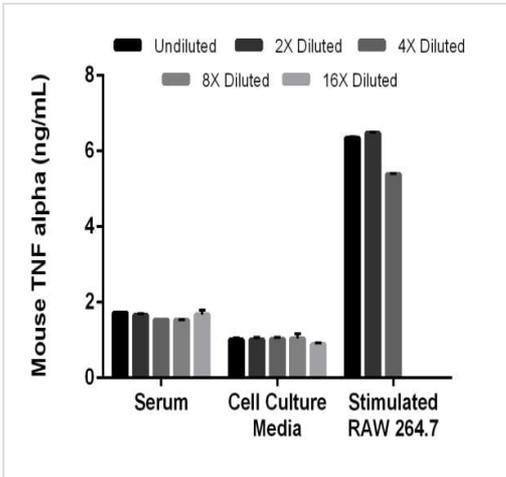
Example of mouse TNF alpha standard curve in Sample Diluent NS.

The TNF alpha standard curve was prepared as described. Raw data values are shown in the table. Background-subtracted data values (mean +/- SD) are graphed.



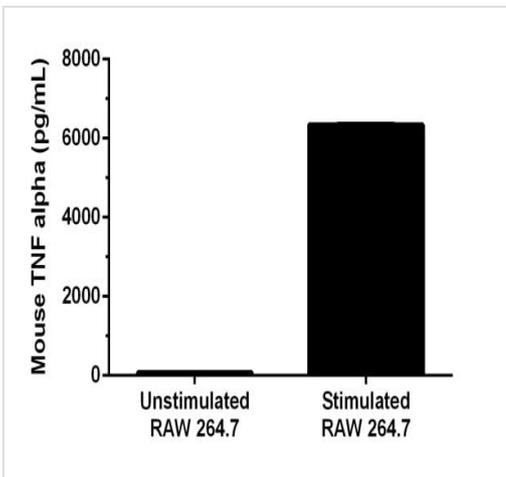
Interpolated concentrations of spiked TNF alpha in mouse plasma samples

The concentrations of TNF alpha were measured in duplicates, interpolated from the TNF alpha standard curves and corrected for sample dilution. Undiluted samples are as follows: plasma (citrate) 100%, plasma (EDTA) 100%, and plasma (heparin) 100%. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean TNF alpha concentration was determined to be 1.68 ng/mL in plasma (citrate), 1.81 ng/mL in plasma (EDTA) and 1.47 ng/mL in plasma (heparin).



Interpolated concentrations of spiked mouse TNF alpha in mouse serum and cell culture samples and native mouse TNF alpha in mouse RAW 264.7 LPS stimulated cell culture supernatants

The concentrations of TNF alpha were measured in duplicates, interpolated from the TNF alpha standard curves and corrected for sample dilution. Undiluted samples are as follows: serum 100%, cell culture 100%, and RAW 264.7 LPS stimulated cell culture supernatants 50%. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean TNF alpha concentration was determined to be 1.63 ng/mL in serum, 1.00 ng/mL in cell culture and 6.07 ng/mL in RAW 264.7 LPS stimulated cell culture supernatants.



Interpolated concentrations of native TNF alpha in mouse RAW 264.7 LPS stimulated and unstimulated cell culture supernatant samples

The concentrations of TNF alpha were measured in duplicates, interpolated from the TNF alpha standard curves and corrected for sample dilution. Undiluted samples are as follows: RAW 264.7 LPS stimulated supernatant 50% and RAW 264.7 LPS unstimulated supernatant 50%. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean TNF alpha concentration was determined to be 6346.4 pg/mL in RAW 264.7 LPS stimulated supernatant and 83.7 pg/mL in RAW 264.7 LPS unstimulated supernatant. RAW 264.7 cells were cultured in HGDMEM with 100 µg/mL Kanamycin and 2 mM L-glutamine. Cells were starved for 24 hours and treated in the presence and absence of 5 µg/mL of LPS.

Sample Diluent Buffer	n=	Minimal Detectable Dose
Sample Diluent NS	24	9.8 pg/mL
Sample Diluent 10BS	24	12.1 pg/mL
Sample Diluent 25BS	24	9.1 pg/mL

Assay sensitivity

The calculated minimal detectable dose (MDD) is determined by calculating the mean of zero standard replicates and adding 2 standard deviations then extrapolating the corresponding concentrations. The MDD is dependent on the Sample Diluent buffer used.

Powered by  
recombinant antibodies



**Research with confidence**  
Consistent and reproducible results



**Long-term and scalable supply**  
Recombinant technology



**Success from the first experiment**  
Confirmed specificity



**Ethical standards compliant**  
Animal-free production

Sandwich ELISA - Mouse TNF alpha ELISA Kit  
(ab208348)

To learn more about the advantages of recombinant antibodies see [here](#).

**Please note:** All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

### Our Abpromise to you: Quality guaranteed and expert technical support

---

- Replacement or refund for products not performing as stated on the datasheet
- Valid for 12 months from date of delivery
- Response to your inquiry within 24 hours
- We provide support in Chinese, English, French, German, Japanese and Spanish
- Extensive multi-media technical resources to help you
- We investigate all quality concerns to ensure our products perform to the highest standards

If the product does not perform as described on this datasheet, we will offer a refund or replacement. For full details of the Abpromise, please visit <https://www.abcam.com/abpromise> or contact our technical team.

### Terms and conditions

---

- Guarantee only valid for products bought direct from Abcam or one of our authorized distributors