

### Rat TNF alpha ELISA Kit ab236712

Recombinant SimpleStep ELISA<sup>®</sup>

[38 References](#) [5 Images](#)

#### Overview

**Product name** Rat TNF alpha ELISA Kit

**Detection method** Colorimetric

#### Precision

Intra-assay

Sample	n	Mean	SD	CV%
Supernatant	3			3.9%

Inter-assay

Sample	n	Mean	SD	CV%
Supernatant	8			5.1%

**Sample type**

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

**Assay type**

Sandwich (quantitative)

**Sensitivity**

1.04 pg/ml

**Range**

18.75 pg/ml - 1200 pg/ml

#### Recovery

Sample specific recovery

Sample type	Average %	Range
Cell culture supernatant	106	101% - 115%
Serum	81	79% - 83%
Hep Plasma	77	76% - 78%
EDTA Plasma	81	81% - 82%
Cit plasma	82	80% - 83%

**Assay time**

1h 30m

**Assay duration**

One step assay

**Species reactivity****Reacts with:** Rat**Product overview**

Rat TNF alpha ELISA Kit (ab236712) is a single-wash 90 min sandwich ELISA designed for the quantitative measurement of TNF alpha protein in cell culture supernatant, cit plasma, edta plasma, hep plasma, and serum. It uses our proprietary SimpleStep ELISA® technology. Quantitate Rat TNF alpha with 1.04 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.

**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	10 x 96 tests
10X Rat TNF alpha Capture Antibody	1 x 600µl	1 x 6000µl
10X Rat TNF alpha Detector Antibody	1 x 600µl	1 x 6000µl
10X Wash Buffer PT (ab206977)	1 x 20ml	1 x 200ml
Antibody Diluent 4BR	1 x 6ml	10 x 6ml
Plate Seals	1 unit	1 x 10 units
Rat TNF alpha Lyophilized Recombinant Protein	2 vials	2 x 10 vials
Sample Diluent NS (ab193972)	1 x 50ml	2 x 250ml
SimpleStep Pre-Coated 96-Well Microplate (ab206978)	1 unit	1 x 10 units
Stop Solution	1 x 12ml	1 x 120ml
TMB Development Solution	1 x 12ml	1 x 120ml

**Function**

Cytokine that binds to TNFRSF1A/TNFR1 and TNFRSF1B/TNFB. 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.

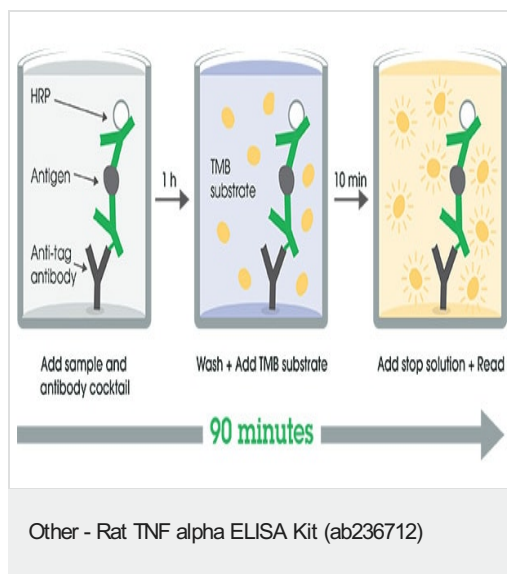
Dephosphorylation of the membrane form occurs by binding to soluble TNFRSF1A/TNFR1.

O-glycosylated; glycans contain galactose, N-acetylgalactosamine and N-acetylneuraminic acid.

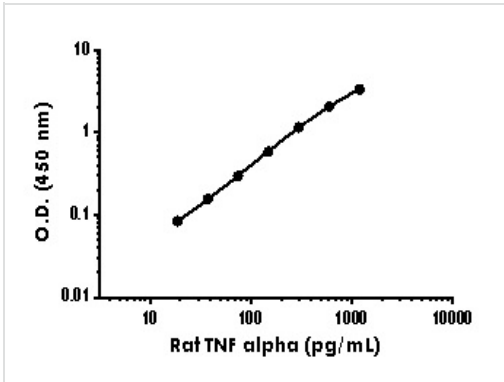
### Cellular localization

Secreted and Cell membrane.

## Images

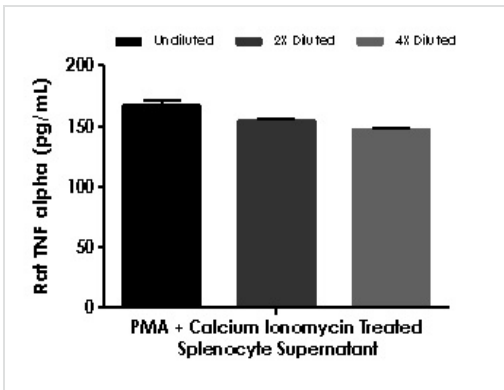


SimpleStep ELISA technology allows the formation of the antibody-antigen complex in one single step, reducing assay time to 90 minutes. Add samples or standards and antibody mix to wells all at once, incubate, wash, and add your final substrate. See protocol for a detailed step-by-step guide.



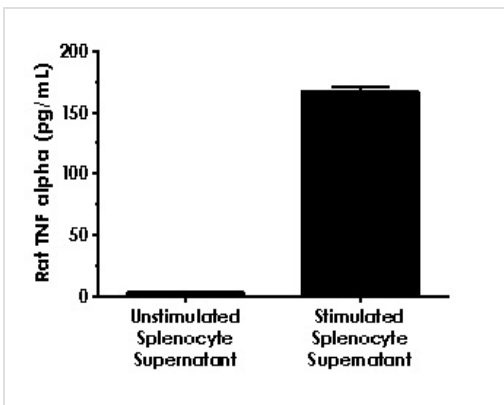
Example of rat TNF alpha standard curve in Sample Diluent NS.

The TNF alpha standard curve was prepared as described in Section 10. Raw data values are shown in the table. Background-subtracted data values (mean +/- SD) are graphed.



Interpolated concentrations of native TNF alpha in rat 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 50 ng/mL PMA + 500 ng/mL calcium ionomycin treated splenocyte cell culture supernatant - 100%. Treatment length was 72 hours. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean TNF alpha concentration was determined to be 156.05 pg/mL in treated splenocyte culture supernatant.



Interpolated concentrations of native TNF alpha in rat splenocyte cell culture supernatant based on 100% load.

The concentrations of TNF alpha were measured in duplicate and interpolated from the TNF alpha standard curve and corrected for sample dilution. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean TNF alpha concentration was below the lowest standard (<18.75) pg/mL in unstimulated splenocyte cell culture supernatant and 156.05 pg/mL in stimulated splenocyte cell culture supernatant. Stimulated samples were treated with 50 ng/mL PMA + 500 ng/mL calcium ionomycin for 72 hours. Unstimulated cells as a control were cultured in parallel for 72 hours.

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Sandwich ELISA - Rat TNF alpha ELISA Kit  
(ab236712)

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"

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