Overview

Product name: Human TNF alpha ELISA Kit
Detection method: Colorimetric
Sample type: Cell culture supernatant, Serum, Plasma
Assay type: Sandwich (quantitative)
Sensitivity: < 30 pg/ml
Range: 24.58 pg/ml - 6000 pg/ml
Recovery: 94%

Sample specific recovery

<table>
<thead>
<tr>
<th>Sample type</th>
<th>Average %</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cell culture supernatant</td>
<td>96.43</td>
<td>84% - 104%</td>
</tr>
<tr>
<td>Serum</td>
<td>94.53</td>
<td>82% - 103%</td>
</tr>
<tr>
<td>Plasma</td>
<td>91.92</td>
<td>80% - 102%</td>
</tr>
</tbody>
</table>

Assay duration: Multiple steps standard assay

Species reactivity: Reacts with: Human

Product overview

Abcam’s TNF alpha Human ELISA (Enzyme-Linked Immunosorbent Assay) kit is an in vitro enzyme-linked immunosorbent assay for the quantitative measurement of Human TNF alpha in serum, plasma and cell culture supernatants. (Human TNF alpha concentration is pretty low in normal serum/plasma, it may not be detected in this assay).

This assay employs an antibody specific for Human TNF alpha coated on a 96-well plate. Standards and samples are pipetted into the wells and TNF alpha present in a sample is bound to the wells by the immobilized antibody. The wells are washed and biotinylated anti-Human TNF alpha antibody is added. After washing away unbound biotinylated antibody, HRP conjugated streptavidin is pipetted to the wells. The wells are again washed, a TMB substrate solution is added to the wells and color develops in proportion to the amount of TNF alpha bound. The Stop Solution changes the color from blue to yellow, and the intensity of the color is measured at 450 nm.
Get higher sensitivity in only 90 minutes with Human TNF alpha ELISA Kit (ab181421) from our SimpleStep ELISA® range.

Notes
Optimization may be required with urine samples.

Platform
Microplate

Properties

Storage instructions
Store at -20°C. Please refer to protocols.

<table>
<thead>
<tr>
<th>Components</th>
<th>1 x 96 tests</th>
</tr>
</thead>
<tbody>
<tr>
<td>20X Wash Buffer Concentrate</td>
<td>1 x 25ml</td>
</tr>
<tr>
<td>5X Assay Diluent B</td>
<td>1 x 15ml</td>
</tr>
<tr>
<td>600X HRP-Streptavidin Concentrate</td>
<td>1 x 200µl</td>
</tr>
<tr>
<td>Assay Diluent A</td>
<td>1 x 30ml</td>
</tr>
<tr>
<td>Biotinylated anti-Human TNF alpha</td>
<td>2 vials</td>
</tr>
<tr>
<td>Recombinant Human TNF alpha Standard (lyophilized)</td>
<td>2 vials</td>
</tr>
<tr>
<td>Stop Solution</td>
<td>1 x 8ml</td>
</tr>
<tr>
<td>TMB One-Step Substrate Reagent</td>
<td>1 x 12ml</td>
</tr>
<tr>
<td>TNF alpha Microplate (12 x 8 wells)</td>
<td>1 unit</td>
</tr>
</tbody>
</table>

Function
Cytokine that binds to TNFRSF1A/TNFR1 and TNFRSF1B/TNFBR. 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 rheumatoid-like 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**

Standard curve of huIL-8 with background signal subtracted (duplicates; +/- SD).

huTNFα measured in biological fluids, background signal subtracted (duplicates +/- SD).

TNFα detected in supernatants from control cells (C) or cells stimulated for 24 hours with 50 ng x mL⁻¹ of PMA (ab120297) (P), and PMA with the addition of 1 ug x mL⁻¹ of LPS (Sigma) (P+L) for the last 6 hours. PBMCs were stimulated for 48 hours with 2% PHA-M (LifeTechnologies). Results shown after background signal was subtracted (duplicates +/- SD).
Representative standard curve using ab100654

Typical standard curve

Representative standard curve using ab100654

Typical standard curve

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