

Anti-TNF alpha Antibody

Catalog Number: PA1079

About TNF

TNF alpha (Tumor Necrosis Factor alpha) gene encodes a multifunctional proinflammatory cytokine that belongs to the tumor necrosis factor (TNF) superfamily. This cytokine is mainly secreted by macrophages. It can bind to, and thus functions through its receptors TNFRSF1A/TNFR1 and TNFRSF1B/TNFR2. This cytokine is involved in the regulation of a wide spectrum of biological processes including cell proliferation, differentiation, apoptosis, lipid metabolism, and coagulation. This cytokine has been implicated in a variety of diseases, including autoimmune diseases, insulin resistance, and cancer. Knockout studies in mice also suggested the neuroprotective function of this cytokine.

Overview

Product Name	Anti-TNF alpha Antibody
Reactive Species	Human, Mouse, Rat
Description	Boster Bio Anti-TNF alpha Antibody catalog # PA1079. Tested in Flow Cytometry, IHC, WB applications. This antibody reacts with Human, Mouse, Rat.
Application	Flow Cytometry, IHC, WB
Clonality	Polyclonal
Formulation	Each vial contains 4 mg Trehalose, 0.9 mg NaCl and 0.2 mg Na ₂ HPO ₄ .
Storage Instructions	Store at -20°C for one year from date of receipt. After reconstitution, at 4°C for one month. It can also be aliquotted and stored frozen at -20°C for six months. Avoid repeated freeze-thaw cycles.
Host	Rabbit
Uniprot ID	P01375

Technical Details

Immunogen	A synthetic peptide corresponding to a sequence at the C-terminus of human TNF alpha, different from the related mouse sequence by five amino acids, and rat sequence by seven amino acids.
Predicted Reactive Species	Chicken
Recommended Detection Systems	Boster recommends Enhanced Chemiluminescent Kit with anti-Rabbit IgG (EK1002) for Western blot, and HRP Conjugated anti-Rabbit IgG Super Vision Assay Kit (SV0002-1) for IHC(P).
Cross Reactivity	No cross-reactivity with other proteins
Isotype	Rabbit IgG
Form	Lyophilized
Concentration	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml.

Purification	Immunogen affinity purified.
Suggested Dilutions	<p>Dilute the sample so that the expected range of concentrations fall within the detection range of this kit.</p> <p>If the expected range of concentration is unknown, a pilot test should be conducted to decide the optimal dilution ratio for your samples.</p> <p>Some PubMed article(s) citing the expression level of this target are as follows:</p> <p>Boster Bio's internal QC testing used:</p> <p>Western blot, 0.1-0.5ug/ml, Human, Mouse, Rat</p> <p>Immunohistochemistry (Paraffin-embedded Section), 2-5ug/ml, Human, By Heat</p> <p>Flow Cytometry, 1-3 ug/1x10⁶ cells, Human</p>

Anti-TNF alpha Antibody (PA1079) Images

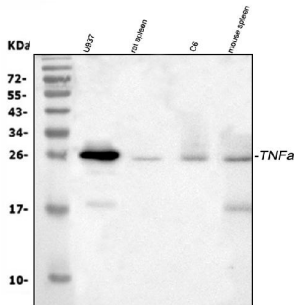


Figure 1. Western blot analysis of TNF alpha using anti-TNF alpha antibody (PA1079). Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours. The sample well of each lane was loaded with 30 ug of sample under reducing conditions.

Lane 1: human U937 whole cell lysates,

Lane 2: rat spleen tissue lysates,

Lane 3: rat C6 whole cell lysates,

Lane 4: mouse spleen tissue lysates.

After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-TNF alpha antigen affinity purified polyclonal antibody (Catalog # PA1079) at 0.5 ug/mL overnight at 4°C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal is developed using an Enhanced Chemiluminescent detection (ECL) kit (Catalog # EK1002) with Tanon 5200 system. A specific band was detected for TNF alpha at approximately 25 kDa. The expected band size for TNF alpha is at 26 kDa.

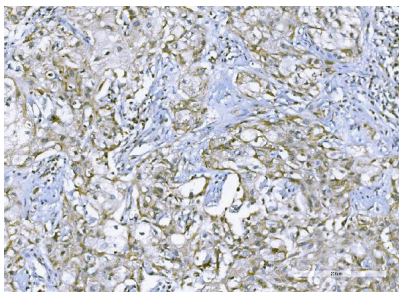


Figure 2. IHC analysis of TNF alpha using anti-TNF alpha antibody (PA1079).

TNF alpha was detected in a paraffin-embedded section of human B lymphocytic tumor tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 ug/ml rabbit anti-TNF alpha Antibody (PA1079) overnight at 4°C. Peroxidase Conjugated Goat Anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using HRP Conjugated Rabbit IgG Super Vision Assay Kit (Catalog # SV0002) with DAB as the chromogen.

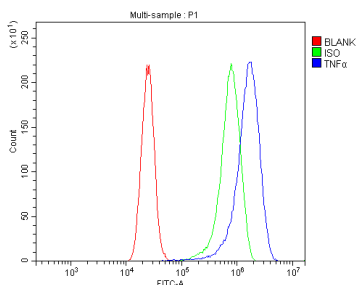


Figure 3. Flow Cytometry analysis of CACO-2 cells using anti-TNF alpha antibody (PA1079).

Overlay histogram showing CACO-2 cells stained with PA1079 (Blue line). The cells were blocked with 10% normal goat serum. And then incubated with rabbit anti-TNF alpha Antibody (PA1079, 1 ug/1x10⁶ cells) for 30 min at 20°C. DyLight®488 conjugated goat anti-rabbit IgG (BA1127, 5-10 ug/1x10⁶ cells) was used as secondary antibody for 30 minutes at 20°C. Isotype control antibody (Green line) was rabbit IgG (1 ug/1x10⁶) used under the same conditions. Unlabelled sample (Red line) was also used as a control.

1. PubMed ID: 10.1016/j.smallrumres.2011.11.010, Immunohistochemical detection of the cytokine and chemokine expression in the gut of lambs and kids with coccidiosis
2. PubMed ID: 33823825, Wang B,Gao C,Zhang P,Sun W,Zhang J,Gao J.The increased motion of lumbar induces ligamentum flavum hypertrophy in a rat model. BMC Musculoskelet Disord.2021 Apr 6;22(1):334.doi:10.1186/s12891-021-04203-x.PMID:33823825.
3. PubMed ID: -, Yang Ping,Yingpeng Li,Shaowa Lü,Yali Sun,Wanmeng Zhang,Jialin Wu,Ting Liu,Yongji Li,A study of nanometre aggregates formation mechanism and antipyretic effect in Bai-Hu-Tang, an ancient Chinese herbal decoction,Biomedicine & Pharmacotherapy,Volume 124,202

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