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Anti-STAT3 Antibody Picoband®

Catalog Number: PB9511

About STAT3

The transcription factor, signal transducer and activator of transcription-3 (STAT-3) is the most pleiotropic member of the signal transducer and activator of transcription (STAT) family of transcription factors and mediates pivotal responses for the cytokine family. The mouse STAT3 gene contains 24 exons and spans 30 kb. The translation initiation codon is in exon 2, and the stop codon is in exon 24. STAT3 is mapped to 17q21. It contributes to various physiological processes. Hepatic STAT-3 signaling is thus essential for normal glucose homeostasis and may provide new therapeutic targets for diabetes mellitus.

Overview

Product Name	Anti-STAT3 Antibody Picoband®
Reactive Species	Human, Mouse, Rat
Description	Boster Bio Anti-STAT3 Antibody Picoband® catalog # PB9511. Tested in Flow Cytometry, IF, IHC, ICC, WB applications. This antibody reacts with Human, Mouse, Rat. The brand Picoband indicates this is a premium antibody that guarantees superior quality, high affinity, and strong signals with minimal background in Western blot applications. Only our best-performing antibodies are designated as Picoband, ensuring unmatched performance.
Application	Flow Cytometry, IF, IHC, ICC, WB
Clonality	Polyclonal
Formulation	Each vial contains 4 mg Trehalose, 0.9 mg NaCl and 0.2 mg Na2HPO4.
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	P40763

Technical Details

Immunogen	A synthetic peptide corresponding to a sequence at the N-terminus of human STAT3, identical to the related mouse and rat sequences.
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 ICC.
Cross Reactivity	No cross-reactivity with other proteins
Isotype	Rabbit IgG
Form	Lyophilized

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Concentration	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml.
Purification	Immunogen affinity purified.
Suggested Dilutions	Western blot, 0.1-0.5 ug/ml, Human, Mouse, Rat Immunohistochemistry (Paraffin-embedded Section), 2-5ug/ml, Human Immunocytochemistry/Immunofluorescence, 5 ug/ml, Human Flow Cytometry(Fixed), 1-3 ug/1x10^6 cells, Human, Rat

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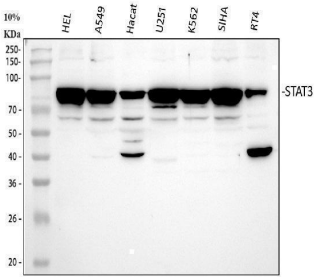
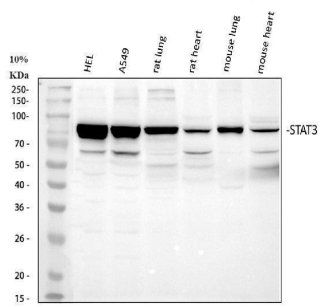
Anti-STAT3 Antibody Picoband® (PB9511) Images



Western blot analysis of STAT3 using anti-STAT3 antibody (PB9511). 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 HEL whole cell lysates, Lane 2: human A549 whole cell lysates, Lane 3: human Hacat whole cell lysates, Lane 4: human U251 whole cell lysates, Lane 5: human K562 whole cell lysates, Lane 6: human SiHa whole cell lysates, Lane 7: human RT4 whole cell 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-STAT3 antigen affinity purified polyclonal antibody (Catalog # PB9511) 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. Specific bands were detected for STAT3 at approximately 88 kDa. The expected band size for STAT3 is at 88 kDa.



Western blot analysis of STAT3 using anti-STAT3 antibody (PB9511). 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 HEL whole cell lysates, Lane 2: human A549 whole cell lysates, Lane 3: rat lung tissue lysates, Lane 4: rat heart tissue lysates, Lane 5: mouse lung tissue lysates, Lane 6: mouse heart 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-STAT3 antigen affinity purified polyclonal antibody (Catalog # PB9511) 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. Specific bands were detected for STAT3 at approximately 88 kDa. The expected band size for STAT3 is at 88 kDa.

The expression of leptin in serum and target protein expression in lung tissues of C57BL/6J mice. (A) Serum leptin levels in different groups of C57BL/6J mice as measured by ELISA (n =3–5 mice/group). *P < 0.05, **P < 0.01. (B) Pulmonary expression of STAT3 and GRP78 in different groups of C57BL/6J mice shown by western blotting (n=3

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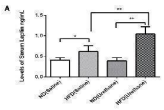
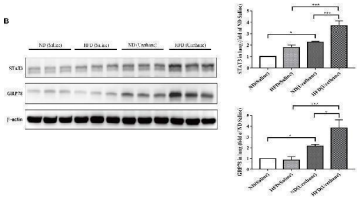
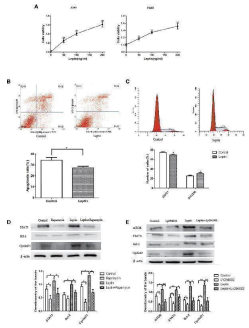
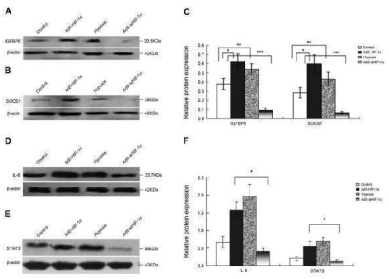




mice/group). *P < 0.05, **P < 0.01, ***P < 0.001.Index in PubMed under a CC BY license. PMID: 33708630



Effect of leptin on lung cancer cell proliferation and apoptosis in vitro . (A) Cell viability increased in a dose-dependent manner when A549 or H460 cells were treated with increasing concentrations of leptin (0, 50, 100, and 200 ng/ml). (B) Proportion of apoptotic cells decreased when A549 was treated with 100 ng/ml leptin as measured by flow cytometry assays. Upper: representative image of flow cytometry assay. (C) Cell cycle changes were observed when A549 was treated with 100 ng/ml leptin. Upper: representative image of flow cytometry assay. (D) Western blotting for the expression of STAT3, Bcl-2, and CyclinD1 in A549 lung cancer cells with or without the inhibition of mTOR. (E) Western blotting for the expression of mTOR, STAT3, Bcl-2, and CyclinD1 in A549 lung cancer cells with or without the Inhibition of PI3K. All quantifications are made from three individual experiments. *P < 0.05, **P < 0.01.Index in PubMed under a CC BY license. PMID: 33708630



Western blot analysis of regulation of protein expression by HIF-1alpha in NCI-H446 cells . According to different treatments, all the cells were divided into four groups: control group (the cells cultured under normoxic conditions of 20% O2), Ad5-HIF-1alpha transfection group, hypoxia group (the cells cultured under normoxic conditions of 1% O2) and Ad5-siHIF-1alpha transfection group (after transfection, the cells were cultured under normoxic conditions of 1% O2). (A) Western blot analysis for IGFBP5 protein expressed by the cells of four groups. (B) Western blot analysis for SOCS1 protein expressed by the cells of four groups. (C) Densitometric analysis of the IGFBP5 and SOCS1 bands compared to the corresponding beta-actin bands (*p < 0.05 expression of IGFBP5 or SOCS1 protein in Ad5-HIF-1alpha group vs. control group; ** p < 0.05 expression of IGFBP5 or SOCS1 protein in hypoxia group vs. control group; *** p < 0.05 expression of IGFBP5 or SOCS1 protein in Ad5-siHIF-1alpha group vs. control group). (D) Western blot analysis for IL-6 protein expressed by the cells of four groups. (E) Western blot analysis for STAT3 protein expressed by the cells of four groups. (F) Densitometric analysis of the IL-6 and STAT3 bands compared to the corresponding beta-actin bands (*p < 0.05 expression of IL-6 or STAT3 protein in Ad5-HIF-1alpha group vs. Ad5-siHIF-1alpha group group.) Index in PubMed under a CC BY license. PMID: 20003295

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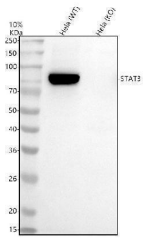
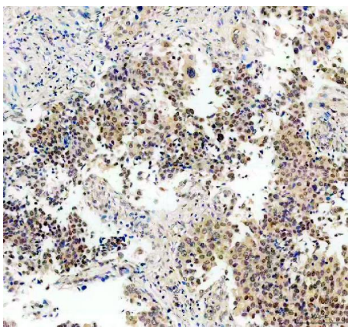
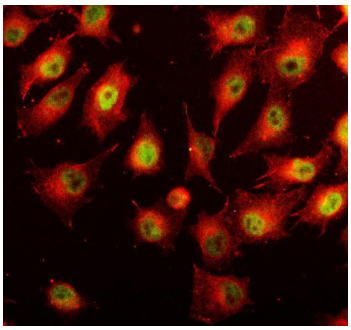


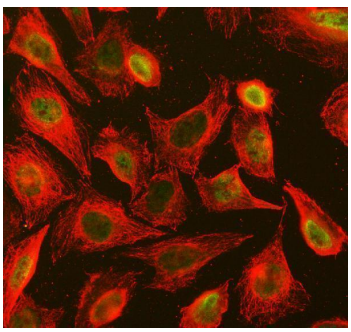
Western blot analysis of STAT3 using anti-STAT3 antibody (PB9511). Electrophoresis was performed on a 10% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. The sample well of each lane was loaded with 30 ug of sample under reducing conditions. Lane 1: human Hela-WT whole cell lysates, Lane 2: human Hela-STAT3 KO whole cell 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. Then the membrane was incubated with rabbit anti-STAT3 antigen affinity purified polyclonal antibody (PB9511) 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 (Catalog # BA1054) at a dilution of 1:5000 for 1.5 hour at RT. The signal is developed using an ECL Plus Western Blotting Substrate (Catalog # AR1196-200) with Tanon 5200 system. A specific band was detected for STAT3 at approximately 88 kDa. The expected band size for STAT3 is at 88 kDa.



IHC analysis of STAT3 using anti-STAT3 antibody (PB9511). STAT3 was detected in a paraffin-embedded section of human lung cancer 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-STAT3 Antibody (PB9511) 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.



IF analysis of STAT3 using anti-STAT3 antibody (PB9511) and anti-Beta Tubulin antibody (M01857-3). STAT3 was detected in immunocytochemical section of A549 cell. Enzyme antigen retrieval was performed using IHC enzyme antigen retrieval reagent (AR0022) for 15 mins. The cells were blocked with 10% goat serum. And then incubated with 5 ug/mL rabbit anti-STAT3 Antibody (PB9511) and mouse anti-Beta Tubulin antibody (M01857-3) overnight at 4°C. DyLight®488 Conjugated Goat Anti-Rabbit IgG (BA1127) and DyLight®594 Conjugated Goat Anti-Mouse IgG (BA1141) were used as secondary antibody at 1:500 dilution and incubated for 30 minutes at 37°C. Visualize using a fluorescence microscope and filter sets appropriate for the label used.



IF analysis of STAT3 using anti-U2OS antibody (PB9511) and anti-Beta Tubulin antibody (M01857-3). STAT3 was detected in immunocytochemical section of U2OS cell. Enzyme antigen retrieval was performed using IHC enzyme antigen retrieval reagent (AR0022) for 15 mins. The cells were blocked with 10% goat serum. And then incubated with 5 ug/mL rabbit anti-STAT3 Antibody (PB9511) and mouse anti-Beta Tubulin antibody (M01857-3) overnight at 4°C. DyLight®488 Conjugated Goat Anti-Rabbit IgG (BA1127) and

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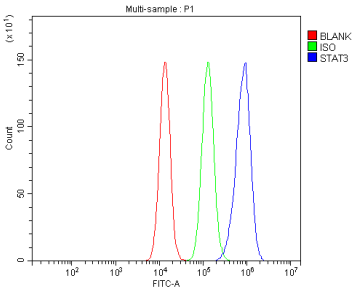
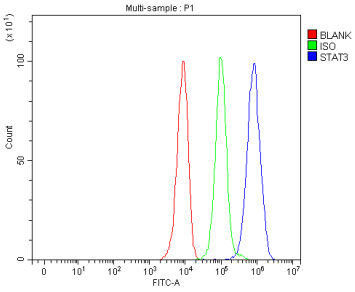
Cy3 Conjugated Goat Anti-Mouse IgG (BA1031) were used as secondary antibody at 1:500 dilution and incubated for 30 minutes at 37°C. Visualize using a fluorescence microscope and filter sets appropriate for the label used.



Flow Cytometry analysis of SiHa cells using anti-STAT3 antibody (PB9511). Overlay histogram showing SiHa cells stained with PB9511 (Blue line). To facilitate intracellular staining, cells were fixed with 4% paraformaldehyde and permeabilized with permeabilization buffer. The cells were blocked with 10% normal goat serum. And then incubated with rabbit anti-STAT3 Antibody (PB9511, 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 without incubation with primary antibody and secondary antibody (Red line) was used



Flow Cytometry analysis of PC-12 cells using anti-STAT3 antibody (PB9511). Overlay histogram showing PC-12 cells stained with PB9511 (Blue line). To facilitate intracellular staining, cells were fixed with 4% paraformaldehyde and permeabilized with permeabilization buffer. The cells were blocked with 10% normal goat serum. And then incubated with rabbit anti-STAT3 Antibody (PB9511, 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 without incubation with primary antibody and secondary antibody (Red line) was used

18 Publications Citing This Product

1. PubMed ID: 30747218, Zhang T,Ma L,Wu P,Li W,Li T,Gu R,Dan X,Li Z,Fan X,Xiao Z.Gallic acid has anticancer activity and enhances the anticancer effects of cisplatin in non?small cell lung cancer A549 cells via the JAK/STAT3 signaling pathway.Oncol Rep.2019 Mar;41(3):1779-1788.doi:10.3892/or.2019.6976.Epub 2019 Jan 22.PMID:30747218.

2. PubMed ID: 33152901, He J,Zhang W,Di T,Meng J,Qi Y,Li G,Zhang Y,Su H,Yan W.Water extract of sporoderm-broken spores of Ganoderma lucidum enhanced pd-l1 antibody efficiency through downregulation and relieved complications of pd-l1 monoclonal antibody.Biomed Pharmacother.2020

3. PubMed ID: 33542641, Zhang Q,Duan HX,Li RL,Sun JY,Liu J,Peng W,Wu CJ,Gao YX. Inducing Apoptosis and Suppressing Inflammatory Reactions in Synovial Fibroblasts are Two Important Ways for Guizhi-Shaoyao-Zhimu Decoction Against Rheumatoid Arthritis. J Inflamm Res.2021 Jan 26;14:

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Anti-STAT3 Antibody

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