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Anti-P2X7/P2RX7 Antibody Picoband®

Catalog Number: A01208-3

About P2RX7

P2X purinoceptor 7 is a protein that in humans is encoded by the P2RX7 gene. The product of this gene belongs to the family of purinoceptors for ATP. This receptor functions as a ligand-gated ion channel and is responsible for ATP-dependent lysis of macrophages through the formation of membrane pores permeable to large molecules. Activation of this nuclear receptor by ATP in the cytoplasm may be a mechanism by which cellular activity can be coupled to changes in gene expression. Multiple alternatively spliced variants have been identified, most of which fit nonsense-mediated decay (NMD) criteria.

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Overview

Product Name	Anti-P2X7/P2RX7 Antibody Picoband®
Reactive Species	Human, Mouse, Rat
Description	Boster Bio Anti-P2X7/P2RX7 Antibody Picoband® catalog # A01208-3. Tested in ELISA, Flow Cytometry, IHC, 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	ELISA, Flow Cytometry, IHC, WB
Clonality	Polyclonal
Formulation	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
Storage Instructions	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 freezing and thawing.
Host	Rabbit
Uniprot ID	Q99572

Technical Details

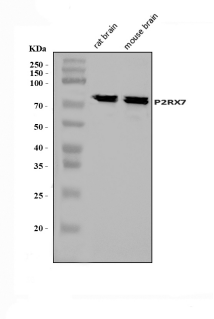
Immunogen	E.coli-derived human P2X7/P2RX7 recombinant protein (Position: S47-K311).
Recommended Detection Systems	Boster recommends Enhanced Chemiluminescent Kit with anti-Rabbit IgG (EK1002) for Western

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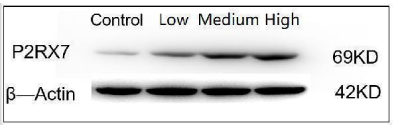
	blot, and HRP Conjugated anti-Rabbit IgG Super Vision Assay Kit (SV0002-1) for IHC(P).
Cross Reactivity	No cross-reactivity with other proteins.
Isotype	Rabbit IgG
Form	Lyophilized
Concentration	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml.
Purification	Immunogen affinity purified.
Suggested Dilutions	Western blot, 0.25-0.5 ug/ml, Mouse, Rat Immunohistochemistry(Paraffin-embedded Section), 2-5 ug/ml, Human, Rat Flow Cytometry (Fixed), 1-3 ug/1x10^6 cells, Human ELISA, 0.1-0.5 ug/ml, - Note: For flow cytometry (FCM), suitable for fixed cells only. Not suitable for FACS or surface flow cytometry using live cells.

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Anti-P2X7/P2RX7 Antibody Picoband® (A01208-3) Images



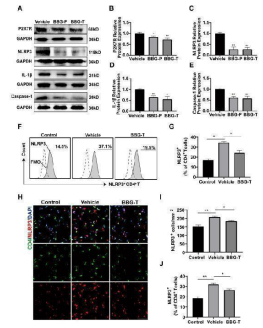
Western blot analysis of P2X7/P2RX7 using anti-P2X7/P2RX7 antibody (A01208-3). Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours. The sample well of each lane was loaded with 30 ug of sample under reducing conditions. Lane 1: rat brain tissue lysates, Lane 2: mouse brain 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-P2X7/P2RX7 antigen affinity purified polyclonal antibody (Catalog # A01208-3) 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 P2X7/P2RX7 at approximately 70 kDa. The expected band size for P2X7/P2RX7 is at 70 kDa.



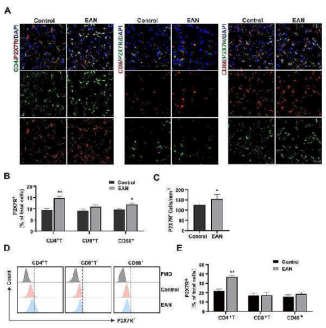
Western blot analysis of P2X7/P2RX7 using anti-P2X7/P2RX7 antibody (A01208-3). Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours. The sample well of each lane was loaded with 30 ug of sample under reducing conditions. Lane 1: Control group-mouse HT22 whole cell lysate, Lane 2: Low-dose drug treatment-mouse HT22 whole cell lysate, Lane 3: Medium-dose drug treatment-mouse HT22 whole cell lysate, Lane 4: High-dose drug treatment-mouse HT22 whole cell lysate. 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-P2X7/P2RX7 antigen affinity purified polyclonal antibody (Catalog # A01208-3) at 1:1000 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 1:2000 for 1 hour at RT. The signal is developed using an Enhanced Chemiluminescent detection (ECL) kit (Catalog # EK1002) with ChemiDoc MP system. A specific band was detected for P2X7/P2RX7 at approximately 69 kDa. The expected band size for P2X7/P2RX7 is at 70 kDa.

BBG treatment suppressed the P2X7R/NLRP3 pathway in CD4 + T cells in EAN. Proteins were obtained from sciatic nerves at the peak of EAN and subjected to western blot analysis and quantification. NLRP3 expression in immune cells was analyzed through flow cytometry and immunofluorescence. (A) Representative western blots of P2X7R, NLRP3, IL-1beta and Caspase-1 protein expression in sciatic nerve. (B-E) Protein levels were quantified via

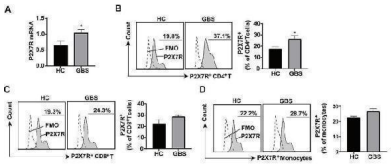
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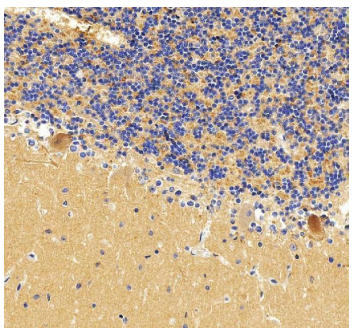
densitometric analysis of immunoreactive bands in western blots using ImageJ software and were normalized to that of GAPDH. (F-G) Flow cytometry analysis and NLRP3 quantification on CD4 + T cells in splenic MNCs of control (unimmunized group), vehicle and BBG-treated rats. (H) Immunofluorescence photomicrographs of NLRP3 expression in CD4 + T cells in the sciatic nerves of control, vehicle, and BBG-treated EAN rats. (I) Number of NLRP3-positive cells in sciatic nerve sections obtained from control rats, vehicle and BBG-treated EAN rats. (J) NLRP3 quantification on CD4 + T cells. Scale bars, 20 um. Experiments were performed in triplicate (n = 6 per replicate) with similar results. Control group, unimmunized group; BBG-P, preventative BBG group; BBG-T, therapeutic BBG group. * p < 0.05, ** p < 0.01 Index in PubMed under a CC BY license. PMID: 38528529



P2X7R expression was significantly elevated in CD4 + T cells in EAN rats. P2X7R expression in T cells and macrophages in control (unimmunized group) and EAN rats at day 18. (A-B) Fluorescence photomicrographs showing P2X7R expression and quantification in CD4 + T cells, CD8 + T cells and macrophages (CD68 +) in the sciatic nerves of EAN and control rats. Scale bars, 20 um. (C) Graph showing the number of P2X7R-positive cells in sciatic nerve sections obtained from control and EAN rats. (D-E) Flow cytometry analysis of P2X7R expression and quantification on CD4 + T cells, CD8 + T cells and macrophages in the spleen of EAN and control rats. Experiments were performed in triplicate (n = 6 per replicate) with similar results. * p < 0.05, ** p < 0.01 Index in PubMed under a CC BY license. PMID: 38528529



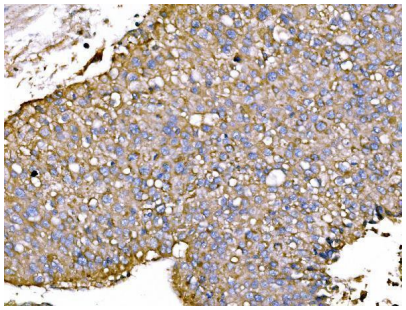
P2X7R expression in blood of patients with GBS and healthy controls. Human peripheral blood mononuclear cells (PBMCs) were isolated from blood samples, and P2X7R expression was examined using flow cytometry and qRT-PCR. (A) P2X7R mRNA levels were elevated in the PBMCs collected from patients with GBS compared to those in PBMCs collected from the healthy controls (n = 8 per group). (B-D) P2X7R expression increased on CD4 + T cells in the PBMCs collected from patients with GBS, but no significant increase was noted on CD8 + T cells or monocytes (CD14 +) compared to healthy controls (n = 7 per group). HC, healthy control; GBS, Guillain–Barre Syndrome. * p < 0.05, ** p < 0.01 Index in PubMed under a CC BY license. PMID: 38528529



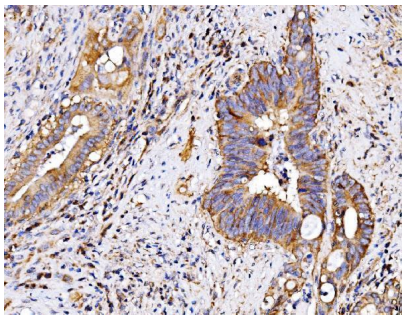
IHC analysis of P2RX7 using anti-P2RX7 antibody (A01208-3). P2RX7 was detected in a paraffin-embedded section of human cerebellum tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 ug/ml rabbit anti-P2RX7 Antibody (A01208-3) 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

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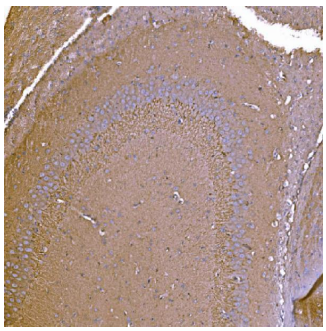
Conjugated Rabbit IgG Super Vision Assay Kit (Catalog # SV0002) with DAB as the chromogen.



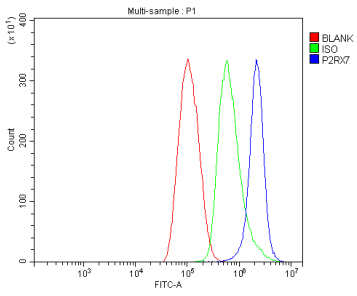
IHC analysis of P2X7/P2RX7 using anti-P2X7/P2RX7 antibody (A01208-3). P2X7/P2RX7 was detected in a paraffin-embedded section of human liver cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 ug/ml rabbit anti-P2X7/P2RX7 Antibody (A01208-3) overnight at 4°C. Biotinylated goat anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC) (Catalog # SA1022) with DAB as the chromogen.



IHC analysis of P2X7/P2RX7 using anti-P2X7/P2RX7 antibody (A01208-3). P2X7/P2RX7 was detected in a paraffin-embedded section of human gall bladder adenosquamous carcinomar 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-P2X7/P2RX7 Antibody (A01208-3) overnight at 4°C. Biotinylated goat anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC) (Catalog # SA1022) with DAB as the chromogen.



IHC analysis of P2X7/P2RX7 using anti-P2X7/P2RX7 antibody (A01208-3). P2X7/P2RX7 was detected in a paraffin-embedded section of rat brain 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-P2X7/P2RX7 Antibody (A01208-3) overnight at 4°C. Biotinylated goat anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC) (Catalog # SA1022) with DAB as the chromogen.



Flow Cytometry analysis of THP-1 cells using anti-P2X7/P2RX7 antibody (A01208-3). Overlay histogram showing THP-1 cells stained with A01208-3 (Blue line). The cells were fixed with 4% paraformaldehyde and blocked with 10% normal goat serum. And then incubated with rabbit anti-P2X7/P2RX7 Antibody (A01208-3, 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 as a blank control.

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1 Publications Citing This Product

1. PubMed ID: 10.1016/j.clineuro.2017.04.012, Increased expression of P2X7 receptor in peripheral blood mononuclear cells correlates with clinical severity and serum levels of Th17-related cytokines in patients with myasthenia gravis

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Anti-P2X7/P2RX7 Antibody

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