BOSTER
antibody and ELISA experts

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3942 B Valley Ave, Pleasanton, CA 94566
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# Anti-CD45/PTPRC Antibody Picoband™

**Catalog Number:** PB9096

## About PTPRC

CD45 (Cluster of Differentiation 45), also known as PTPRC, LCA or CD45R, is an enzyme that, in humans, is encoded by the PTPRC gene. CD45 is a member of the protein tyrosine phosphatase (PTP) family. CD45 is a major high molecular mass leukocyte cell surface molecule which is also an integral membrane protein tyrosine phosphatase. The cytogenetic location of CD45 is 1q31.3-q32.1. This gene is especially a prototype for transmembrane protein-tyrosine phosphatase (PTP). Targeted disruption of the CD45 gene leads to enhanced cytokine and interferon receptor-mediated activation of JAKs and STAT proteins. In vitro, CD45 directly dephosphorylates and binds to JAKs. Functionally, CD45 negatively regulates interleukin-3-mediated cellular proliferation, erythropoietin-dependent hematopoiesis, and antiviral responses in vitro and in vivo. CD45 has been best studied in T cells, where it determines T cell receptor signaling thresholds. CD45 is moved into or out of the immunological synapse (IS) membrane microdomain depending on the relative influence of interaction with the extracellular galectin lattice or the intracellular actin cytoskeleton. Galectin interaction can be finetuned by varying usage of the heavily Oglycosylated spliced regions and sialylation of Nlinked carbohydrates.

## Overview

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| Product Name | Anti-CD45/PTPRC Antibody Picoband™ |
| Reactive Species | Human |
| Description | Boster Bio Anti-CD45/PTPRC Antibody Picoband™ catalog # PB9096. Tested in Flow Cytometry, IF, IHC, WB applications. This antibody reacts with Human. |
| Application | Flow Cytometry, IF, IHC, WB |
| Clonality | Polyclonal |
| Formulation | Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na2HPO4, 0.05mg NaN3. |
| 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 | P08575 |

## Technical Details

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| Immunogen | E.coli-derived human CD45 recombinant protein (Position: R1113-S1304). Human CD45 shares 68% amino acid (aa) sequence identity with both mouse and rat CD45. |
| Predicted Reactive Species | Bovine, Horse, Monkey, Rabbit |
| 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). |
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|---|---|
| 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 | Dilute the sample so that the expected range of concentrations fall within the detection range of this kit.<br>If the expected range of concentration is unknown, a pilot test should be conducted to decide the optimal dilution ratio for your samples.<br>Some PubMed article(s) citing the expression level of this target are as follows:<br>Boster Bio's internal QC testing used:<br>Western blot, 0.1-0.5ug/ml, Human<br>Immunohistochemistry (Paraffin-embedded Section), 0.5-1ug/ml, Human, By Heat<br>Immunofluorescence, 2ug/ml, Human<br>Flow Cytometry, 1-3ug/1x$10^6$ cells, Human |

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# Anti-CD45/PTPRC Antibody Picoband™ (PB9096) Images

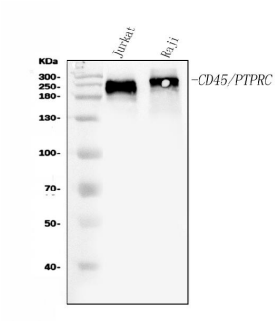


Figure 1. Western blot analysis of CD45 using anti-CD45 antibody (PB9096).
Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours. The sample well of each lane was loaded with 30 ug of sample under reducing conditions.
Lane 1: human Jurkat whole cell lysates,
Lane 2: human Raji 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-CD45 antigen affinity purified polyclonal antibody (Catalog # PB9096) 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 CD45 at approximately 180-250 kDa. The expected band size for AFP is at 147 kDa.

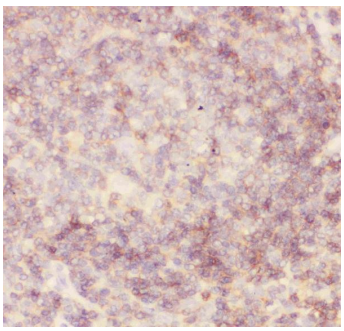

Figure 2. IHC analysis of CD45 using anti-CD45 antibody (PB9096).
CD45 was detected in a paraffin-embedded section of human tonsil tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1 ug/ml rabbit anti-CD45 Antibody (PB9096) 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.

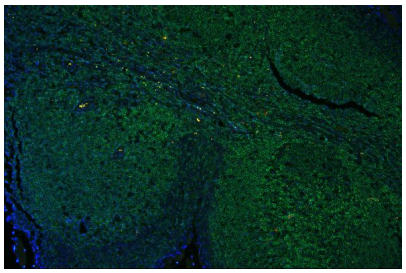

Figure 3. IF analysis of CD45 using anti-CD45 antibody (PB9096)
CD45 was detected in paraffin-embedded section of human tonsil tissues. Heat mediated antigen retrieval was performed in citrate buffer (pH6, epitope retrieval solution ) for 20 mins. The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1ug/mL rabbit anti-CD45 Antibody (PB9096) overnight at 4°C. DyLight®488 Conjugated Goat Anti-Rabbit IgG (BA1127) was used as secondary antibody at 1:100 dilution and incubated for 30 minutes at 37°C. The section was counterstained with DAPI. Visualize using a fluorescence microscope and filter sets appropriate for the label used.

Figure 4. IF analysis of CD45 using anti-CD45 antibody (PB9096)
CD45 was detected in paraffin-embedded section of human

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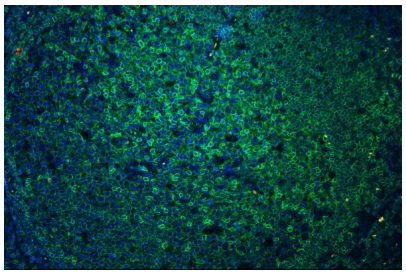

tonsil tissues. Heat mediated antigen retrieval was performed in citrate buffer (pH6, epitope retrieval solution ) for 20 mins. The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1ug/mL rabbit anti-CD45 Antibody (PB9096) overnight at 4°C. DyLight®488 Conjugated Goat Anti-Rabbit IgG (BA1127) was used as secondary antibody at 1:100 dilution and incubated for 30 minutes at 37°C. The section was counterstained with DAPI. Visualize using a fluorescence microscope and filter sets appropriate for the label used.

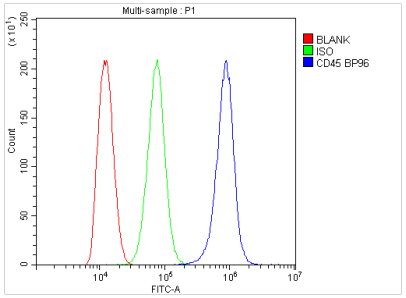


Figure 5. Flow Cytometry analysis of THP-1 cells using anti-CD45 antibody (PB9096).
Overlay histogram showing THP-1 cells stained with PB9096 (Blue line).The cells were blocked with 10% normal goat serum. And then incubated with rabbit anti-CD45 Antibody (PB9096,1ug/1x$10^6$ cells) for 30 min at 20°C. DyLight®488 conjugated goat anti-rabbit IgG (BA1127, 5-10ug/1x$10^6$ cells) was used as secondary antibody for 30 minutes at 20°C. Isotype control antibody (Green line) was rabbit IgG (1ug/1x$10^6$) used under the same conditions. Unlabelled sample (Red line) was also used as a control.

## 6 Publications Citing This Product

1. PubMed ID: 12133481, Fas counterattack in cholangiocarcinoma: A mechanism for immune evasion in human hilar cholangiocarcinomas

2. PubMed ID: 26616638, Isolation and morphological characterization of ovine amniotic fluid mesenchymal stem cells

3. PubMed ID: 26526388, CD11b deficiency suppresses intestinal tumor growth by reducing myeloid cell recruitment

Visit [bosterbio.com/anti-cd45-picoband-trade-antibody-pb9096-boster.html](bosterbio.com/anti-cd45-picoband-trade-antibody-pb9096-boster.html) to see all 6 publications.