BOSTER BIOLOGICAL TECHNOLOGY
3942 B Valley Ave, Pleasanton, CA 94566
888-466-3604 | support@bosterbio.com | www.bosterbio.com

Anti-ZO1 tight junction protein/TJP1 Antibody Picoband®

Catalog Number: PB9234

About TJP1

Tight junction protein ZO-1 is a protein that in humans is encoded by the TJP1 gene. It is mapped to 15q13.1. This gene encodes a protein located on a cytoplasmic membrane surface of intercellular tight junctions. The encoded protein may be involved in signal transduction at cell–cell junctions. It has been found that injected CagA associates with the epithelial tight-junction scaffolding protein TJP1 and the transmembrane protein junctional adhesion molecule, causing an ectopic assembly of tight junction components at sites of bacterial attachment, and altering the composition and function of the apical-junctional complex.

Overview

Product Name	Anti-ZO1 tight junction protein/TJP1 Antibody Picoband®
Reactive Species	Human, Mouse, Rat
Description	Boster Bio Anti-ZO1 tight junction protein/TJP1 Antibody Picoband® catalog # PB9234. 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 antibody formulated with stabilizing components, 0.9 mg NaCl, 0.2 mg Na2HPO4, and 0.05 mg NaN3. *This antibody is supplied in a stabilized formulation. Compatibility with conjugation reactions depends on the chemistry of the conjugation method used. For conjugation methods that are not compatible with the stabilizing components present in this formulation, a carrier-free antibody format is required.
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	Q07157

Technical Details

Immunogen	E.coli-derived human TJP1 recombinant protein (Position: H1178-F1527). Human TJP1 shares 82% amino acid (aa) sequence identity with mouse TJP1.
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) and ICC.

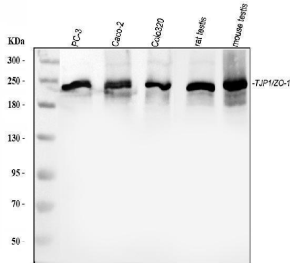
BOSTER BIOLOGICAL TECHNOLOGY
3942 B Valley Ave, Pleasanton, CA 94566
888-466-3604 | support@bosterbio.com | www.bosterbio.com

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, 0.1-0.5ug/ml, Human, Mouse, Rat Immunohistochemistry (Paraffin-embedded Section), 0.5-1ug/ml, Human Immunocytochemistry/Immunofluorescence, 2ug/ml, Human Flow Cytometry (Fixed), 1-3ug/1x10^6 cells, Human

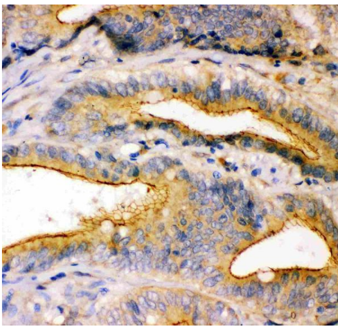
BOSTER
antibody and ELISA experts

BOSTER BIOLOGICAL TECHNOLOGY
3942 B Valley Ave, Pleasanton, CA 94566
888-466-3604 | support@bosterbio.com | www.bosterbio.com

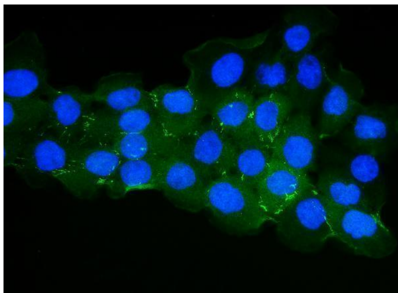
Anti-ZO1 tight junction protein/TJP1 Antibody Picoband® (PB9234) Images



Western blot analysis of TJP1 using anti-TJP1 antibody (PB9234). 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 PC-3 whole cell lysates, Lane 2: human CACO-2 whole cell lysates, Lane 3: human COLO320 whole cell lysates, Lane 4: rat testis tissue lysates, Lane 5: mouse testis 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-TJP1 antigen affinity purified polyclonal antibody (Catalog # PB9234) 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 TJP1 at approximately 220 kDa. The expected band size for TJP1 is at 185 kDa.

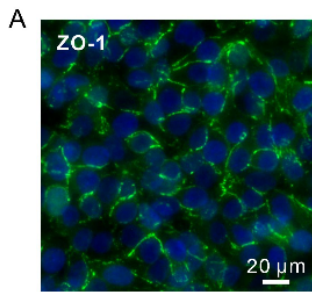


IHC analysis of TJP1 using anti-TJP1 antibody (PB9234).TJP1 was detected in paraffin-embedded section of human intestinal cancer tissue. Heat mediated antigen retrieval was performed in citrate buffer (pH6, epitope retrieval solution) for 20 mins. The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1ug/ml rabbit anti-TJP1 Antibody (PB9234) 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.

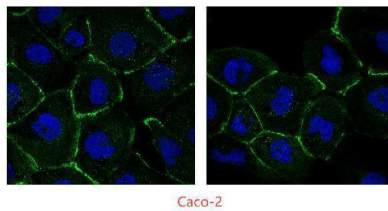


IF analysis of TJP1 using anti-TJP1 antibody (PB9234). TJP1 was detected in immunocytochemical section of A431 cells. Enzyme antigen retrieval was performed using IHC enzyme antigen retrieval reagent (AR0022) for 15 mins. The cells were blocked with 10% goat serum. And then incubated with 2ug/mL rabbit anti-TJP1 Antibody (PB9234) 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.

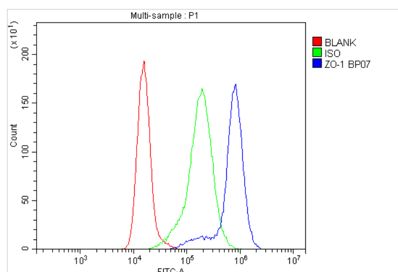
IF analysis of TJP1 using anti-TJP1 antibody (PB9234). TJP1 was detected in an immunocytochemical section of Endothelial cells. Enzyme antigen retrieval was performed using IHC enzyme antigen retrieval reagent (AR0022) for 15 mins. The cells were blocked with 10% goat serum. And then incubated with 1:200 rabbit anti-TJP1 Antibody (PB9234)



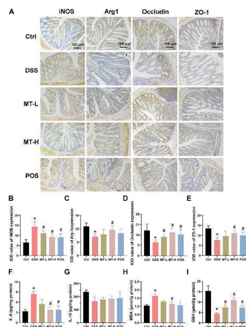
overnight at 4°C. DyLight®488 Conjugated Goat Anti-Rabbit IgG (BA1127) was used as secondary antibody at 1:500 dilution and incubated for 30 minutes at 37°C. The section was counterstained with DAPI. Visualize using a fluorescence microscope and filter sets appropriate for the label used.



IF analysis of TJP1 using anti-TJP1 antibody (PB9234). TJP1 was detected in an immunocytochemical section of human Caco-2 cells. Cells were normally cultured in 24-well plates using MEM supplemented with 20% fetal bovine serum. When the cell density reached approximately 60%, the culture was stopped. The medium was removed, cells were washed three times with PBS, fixed with 4% paraformaldehyde for 15 minutes, and then washed three times with PBS before further use. The cells were blocked with 10% goat serum. And then incubated with 1:200 rabbit anti-TJP1 Antibody (PB9234) overnight at 4°C. DyLight®488 Conjugated Goat Anti-Rabbit IgG (BA1127) was used as secondary antibody at 1:500 dilution and incubated for 45 minutes at 37°C. The section was counterstained with DAPI. Visualize using a fluorescence microscope and filter sets appropriate for the label used.

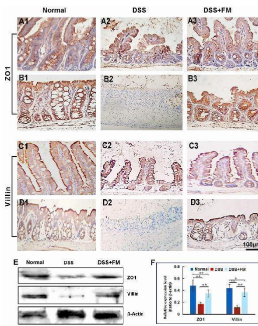


Flow Cytometry analysis of K562 cells using anti-TJP1 antibody (PB9234).Overlay histogram showing K562 cells stained with PB9234 (Blue line). The cells were fixed with 4% paraformaldehyde and blocked with 10% normal goat serum. And then incubated with rabbit anti-TJP1 Antibody (PB9234,1ug/1x106 cells) for 30 min at 20°C. DyLight®488 conjugated goat anti-rabbit IgG (BA1127, 5-10ug/1x106 cells) was used as secondary antibody for 30 minutes at 20°C. Isotype control antibody (Green line) was rabbit IgG (1ug/1x106) used under the same conditions. Unlabelled sample without incubation with primary antibody and secondary antibody (Red line) was used as a blank control.



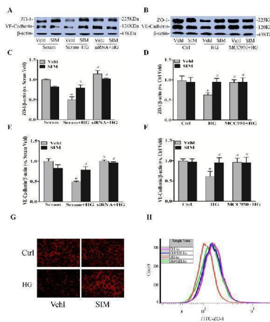
Effects of MT water extract on regulating macrophage polarization, maintaining intestinal barrier integrity, and alleviating oxidative stress in the colons of DSS-induced UC mice. (A) IHC staining of iNOS, Arg1, occludin, and ZO-1 expressions in mouse colon tissues. Quantitative analysis of the integrated optical density (IOD) of (B) iNOS, (C) Arg1, (D) occludin, and (E) ZO-1 in each group. The levels of (F) IL-6, (G) IL-10, (H) MDA, and (I) GSH were measured and analyzed. Data were presented as means ± SD for three independent trials. One-way ANOVA followed by Tukey's multiple comparison test was performed to compare the differences between groups. *p < 0.05 versus control and #p < 0.05 versus DSS alone group. Arg1, arginase 1; DSS, dextran sulfate sodium; IL, interleukin; iNOS, inducible nitric oxide synthase; MDA, malondialdehyde; MT, Medulla

Tetrapanacis.Index in Food Frontiers under a CC BY license.
DOI: 10.1002/fft2.70164

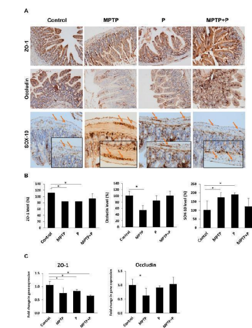


The subcellular localization and relative expression level detection of ZO-1 and villin in the intestinal mucosa of IBD at 7 days after termination of DSS intake. (A) The ZO-1 immunohistochemistry staining of the small intestinal epithelial TJP (brown dots): (A1) the normal group: the villi and crypts were arranged compactly, and the ZO-1-positive staining (representing the TJP) showed the dotted line (brown) along the surface of the villi and the crypts; (A2) the DSS group: ZO-1 distributed dispersively in the residual villi of the small intestinal mucosa; (A3) the DSS + B. subtilis -fermented milk group: the ZO-1 staining formed the dotted line (brown, representing the TJP) at the subsurface of the regenerative villi. (B) The ZO-1 immunohistochemistry staining of the colonic epithelial TJP (brown dots): (B1) the normal group: ZO-1-positive staining distributed on the inner side of the epithelial cell membrane (representing the TJP); (B2) the DSS group: there was no ZO-1-positive staining in the scar; (B3) the DSS + B. subtilis -fermented milk group: the ZO-1-positive staining distributed on the inner side of the regenerative epithelial cell membrane (representing the TJP). (C) The villin immunohistochemistry staining (brown strip) of the small intestinal microvilli: (C1) the normal group: villin-positive staining showed a strip-like distribution on the surface of the villi in the normal small intestinal mucosa; (C2) the DSS group: villin distributed at the surface of the residual villi; (C3) the DSS + B. subtilis -fermented milk group: villin-positive staining formed an integrative strip (brown) enclosing the surface of the regenerative villi. (D) The villin immunohistochemistry staining of the colonic epithelium: (D1) the normal group: villin-positive staining (brown) showed banded distribution on the surface of the epithelium; (D2) the DSS group: almost no villin-positive staining was observed in the scar due to damage of the epithelium; (D3) the DSS + B. subtilis -fermented milk group: the villin-positive staining (brown) showed banded distribution on the surface of the regenerated epithelium in the colonic mucosa. (E,F) The western blotting analysis for the relative expression level of ZO-1 and villin in the samples contained equivalent ileum and colon. The expression level of ZO-1 and villin in the DSS group was significantly lower than that of the normal (control) group. The expression level of ZO-1 and villin and in the DSS + B. subtilis -fermented milk (FM) group was significantly higher than that of the DSS group ($n = 5$, * represents $p < 0.05$, ** represents $p < 0.01$).Index in PubMed under a CC BY license. PMID: 33519783

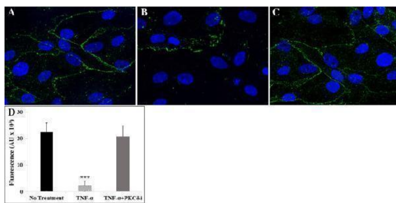
Simvastatin reversed protein expression of high glucose-induced ZO-1 and VE-Cadherin. RAECs were incubated with high glucose for 24h, which was treated with simvastatin (SIM, 5uM) in the presence or absence of NLRP3 siRNA or MCC950 (15nM). Representative Western blot gel documents (A, B) and summarized data showing the protein expression of ZO-1 (C, D) and VE-Cadherin (E, F) . (G) Representative fluorescence images showing the cell



membrane fluorescence of ZO-1 from at least three independent experiments. (H) Frequency histogram of ZO-1 in the membranes showing the protein expression of ZO-1 by flowcytometry. * P



Effect of Lacticaseibacillus rhamnosus E9 administration on tight junction proteins and SOX-10 in ileum of MPTP-induced model of PD compared to the control. (A) Immunohistochemical staining of ileal ZO-1 (100 ×), Occludin (100 ×) (staining intensity is evaluated in ideal mucosa), and SOX-10 (200 ×, inset-4000 ×) (Arrows are nuclear positivity in myenteric plexus). (B) Protein expression of ileal ZO-1, Occludin, and SOX-10 in PD and control mice. (C) Gene expression of ileal ZO-1 and Occludin in PD and control mice. MPTP mice were received (i.p.) 30 mg/kg MPTP-HCl daily for 5 consecutive days (MPTP and MPTP + P). Probiotic mice were administered 1 dose (10 8 CFU/mouse/day) daily of L. rhamnosus E9 for fifteen days and sacrificed after the last dose (P and MPTP + P). *p ≤ 0.05, control vs MPTP (n:4–5/group). Index in PubMed under a CC BY license. PMID: 38965287



Tight junction formation by HBMVEC under flow conditions as indicated by immunofluorescence staining of ZO-1. PKCdelta inhibition (PKCdelta- i) attenuates TNF-alpha-induced tight junction damage in vitro in B 3 C. When cultured with normal media, tight junctions were fully established between adjacent cells (a). Tight junction expression was disrupted after 4 h of TNF-alpha activation (b), while PKCdelta inhibition (TNF-alpha + PKCdelta- i) restored tight junction expression (c). HBMVEC cultured for 72 h under flow (0.1 ul/min) were stained with ZO-1 (red) and Hoechst 33342 (blue). d Quantitative analysis to the total tight junction fluorescence intensity confirmed our observation. Data are presented as mean ± SEM (n = 3). *** p

32 Publications Citing This Product

1. PubMed ID: 10.3390/molecules26144149, The Regulatory Effects of Licochalcone A on the Intestinal Epithelium and Gut Microbiota in Murine Colitis

2. PubMed ID: PMID:26191218, Protective effect of salvianolic acid B on NASH rat liver through restoring intestinal mucosal barrier function

3. PubMed ID: 10.3389/fmicb.2020.622354, Prevention and Alleviation of Dextran Sulfate Sodium Salt-Induced Inflammatory Bowel Disease in Mice With Bacillus subtilis-Fermented Milk via Inhibition of the Inflammatory Responses and Regulation of the Intestinal Flora

Visit bosterbio.com/anti-tjp1-picoband-trade-antibody-pb9234-boster.html to see all 32 publications.

BOSTER BIOLOGICAL TECHNOLOGY
3942 B Valley Ave, Pleasanton, CA 94566
888-466-3604 | support@bosterbio.com | www.bosterbio.com

Submit a product review to Biocompare.com

Submit a review of this product to Biocompare.com to receive a $20 Amazon.com giftcard! Your reviews help your fellow scientists make the right decisions. Thank you for your contribution.

Anti-ZO1 tight junction protein/TJP1 Antibody

For Research Use Only. Not for use in diagnostic procedures.