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Anti-Aquaporin 1/AQP1 Antibody Picoband®

Catalog Number: PB9473

About AQP1

Aquaporin 1 is a 28-kD integral protein thought at first to be a breakdown product of the Rh polypeptide but was later shown to be a unique molecule that is abundant in erythrocytes and renal tubules. AQP1 is also expressed by the choroid plexus and various other tissues. It forms a water-specific channel that provides the plasma membranes of red cells and kidney proximal tubules with high permeability to water, thereby permitting water to move in the direction of an osmotic gradient.

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Overview

Product Name	Anti-Aquaporin 1/AQP1 Antibody Picoband®
Reactive Species	Human, Mouse, Rat
Description	Boster Bio Anti-Aquaporin 1/AQP1 Antibody Picoband® catalog # PB9473. Tested in Flow Cytometry, IF, 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	Flow Cytometry, IF, IHC, 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	P29972

Technical Details

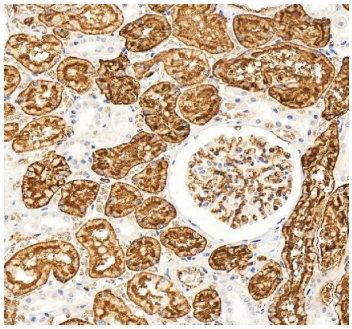
Immunogen	A synthetic peptide corresponding to a sequence at the C-terminus of human Aquaporin 1, different from the related mouse and rat sequences by one amino acid.
Recommended Detection Systems	Boster recommends Enhanced Chemiluminescent Kit with anti-Rabbit IgG (EK1002) for Western

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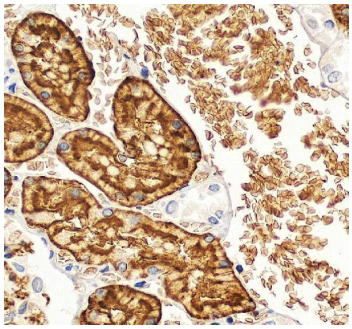
	blot, and HRP Conjugated anti-Rabbit IgG Super Vision Assay Kit (SV0002-1) for IHC(P).
Cross Reactivity	No cross-reactivity with other proteins
Isotype	Rabbit IgG
Form	Lyophilized
Concentration	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml.
Purification	Immunogen affinity purified.
Suggested Dilutions	Western blot, 0.1-0.5ug/ml, Mouse, Rat Immunohistochemistry (Paraffin-embedded Section), 2-5ug/ml, Human, Mouse, Rat Immunofluorescence, 5ug/ml, Rat Flow Cytometry(Fixed), 1-3ug/1x10^6 cells, Human 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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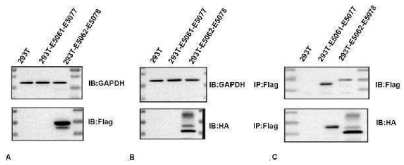
Anti-Aquaporin 1/AQP1 Antibody Picoband® (PB9473) Images



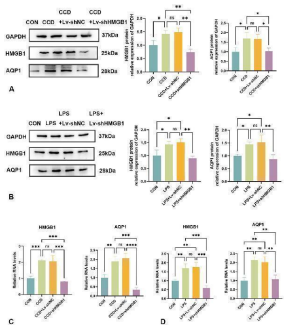
IHC analysis of AQP1 using anti-AQP1 antibody (PB9473). AQP1 was detected in a paraffin-embedded section of human kidney tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 ug/ml rabbit anti-AQP1 Antibody (PB9473) 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.



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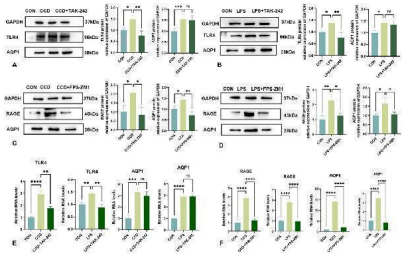
Immunoprecipitation determinations of HMGB1 and AQP1 (A) Western blots of HMGB1 in plasmids. (B) Western blots of AQP1 in plasmids. (C) CO-IP assay results. 293T: 293T-null cells; 293T-E5061-E5077: 293T- E5061 HA empty control plasmid transfection- E5077 negative control CON238 plasmid; 293T-E5062-E5078: 293T- E5062 HA-Aqp1 overexpression plasmid transfection- E5078 Hmgb1-3flag overexpression plasmid. Flag: HMGB1; HA:AQP1.Index in PubMed under a CC BY license. PMID: 39359252



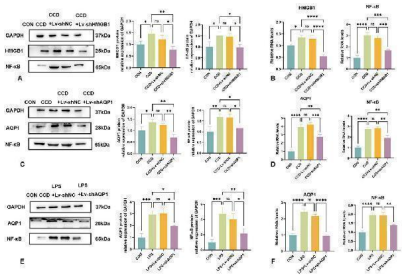
Changes in AQP1 expression after HMGB1 knockdown (A) Protein expression levels of HMGB1 and AQP1 in the spinal cords of rats in each group. (B) Protein expression levels of HMGB1 and AQP1 in the LPS inflammatory cell model in each group. (C) mRNA levels of HMGB1 and AQP1 in the spinal cords of rats in each group. (D) mRNA levels of HMGB1 and AQP1 in the LPS inflammatory cell model in each group. N = 3 per group **** p < 0.0001 *** p < 0.001 ** p < 0.01* p < 0.05.Index in PubMed under a CC BY license. PMID: 39359252

Changes in AQP1 expression after TAK-242 and FPS-ZM1 treatments (A) Protein expression levels of TLR4 and AQP1 in the spinal cords of rats in each group. (B) Protein expression

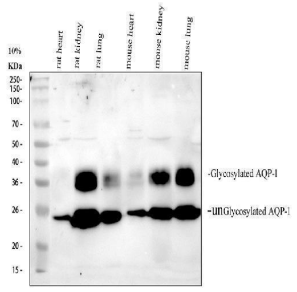
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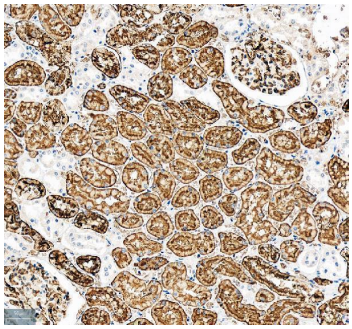
levels of TLR4 and AQP1 in the LPS inflammatory cell model in each group. (C) Protein expression levels of RAGE and AQP1 in the spinal cords of rats in each group. (D) Protein expression levels of RAGE and AQP1 in the LPS inflammatory cell model in each group. (E) mRNA levels of TLR4 and AQP1 in each group. (F) mRNA levels of RAGE and AQP1 in each group. N = 3 per group **** p < 0.0001 *** p < 0.001 ** p < 0.01* p < 0.05.Index in PubMed under a CC BY license. PMID: 39359252



Changes in NF-kappaB expression following knockdown of HMGB1 or AQP1 (A) Protein expression levels of HMGB1 and NF-kappaB in the spinal cords of rats in each group. (B) mRNA levels of HMGB1 and NF-kappaB in the spinal cords of rats in each group. (C) Protein expression levels of AQP1 and NF-kappaB in the spinal cords of rats in each group. (D) mRNA levels of AQP1 and NF-kappaB in the spinal cords of rats in each group. (E) Protein expression levels of NF-kappaB and AQP1 in the LPS inflammatory cell model in each group. (F) mRNA levels of NF-kappaB and AQP1 in the LPS inflammatory cell model in each group. N = 3 per group **** p < 0.0001 *** p < 0.001 ** p < 0.01* p < 0.05.Index in PubMed under a CC BY license. PMID: 39359252



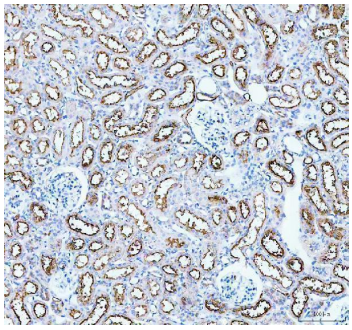
Western blot analysis of AQP1 using anti-AQP1 antibody (PB9473). Electrophoresis was performed on a 10% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. The sample well of each lane was loaded with 30 ug of sample under reducing conditions. Lane 1: rat heart tissue lysates, Lane 2: rat kidney tissue lysates, Lane 3: rat lung tissue lysates, Lane 4: mouse heart tissue lysates, Lane 5: mouse kidney tissue lysates, Lane 6: mouse lung 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-AQP1 antigen affinity purified polyclonal antibody (PB9473) 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 AQP1 at approximately 25, 35-38 kDa. The expected band size for AQP1 is at 28 kDa.



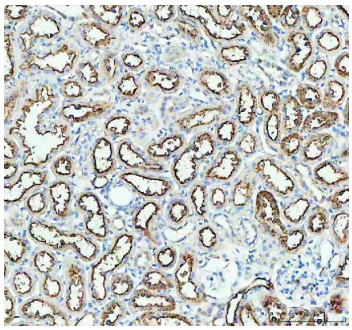
IHC analysis of AQP1 using anti-AQP1 antibody (PB9473). AQP1 was detected in a paraffin-embedded section of human kidney tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 ug/ml rabbit anti-AQP1 Antibody (PB9473) 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

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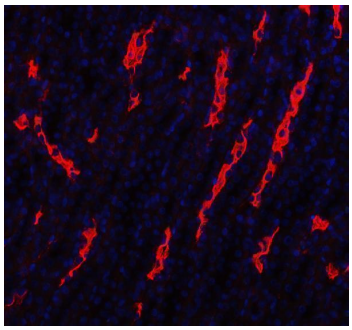
DAB as the chromogen.



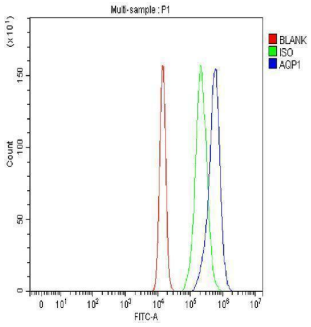
IHC analysis of AQP1 using anti-AQP1 antibody (PB9473). AQP1 was detected in a paraffin-embedded section of mouse kidney tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 ug/ml rabbit anti-AQP1 Antibody (PB9473) 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.



IHC analysis of AQP1 using anti-AQP1 antibody (PB9473). AQP1 was detected in a paraffin-embedded section of rat kidney 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-AQP1 Antibody (PB9473) 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 AQP1 using anti-AQP1 antibody (PB9473). AQP1 was detected in a paraffin-embedded section of rat kidney 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 5 ug/mL rabbit anti-AQP1 Antibody (PB9473) overnight at 4°C. Cy3 Conjugated Goat Anti-Rabbit IgG (BA1032) 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.



Flow Cytometry analysis of U2OS cells using anti-AQP1 antibody (PB9473). Overlay histogram showing U2OS cells stained with PB9473 (Blue line). The cells were fixed with 4% paraformaldehyde and blocked with 10% normal goat serum. And then incubated with rabbit anti-AQP1 Antibody (PB9473, 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.

10 Publications Citing This Product

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1. PubMed ID: 10.1007/s12011-021-02969-8, Lead Exposure in Developmental Ages Promotes Abeta Accumulation by Disturbing Abeta Transportation in Blood-Cerebrospinal Fluid Barrier/Blood–Brain Barriers and Impairing Abeta Clearance in the Liver

2. PubMed ID: 10.1016/j.jtherbio.2020.102727, Seasonal effect in expression of AQP1, AQP3 and AQP5 in skin of Murrah buffaloes

3. PubMed ID: 10.1080/09291016.2021.2007329, Expression of AQP1, AQP3, AQP4 and AQP5 in upper respiratory tract of buffaloes during different seasons

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