

## Anti-Aquaporin 4/AQP4 Antibody Picoband™

Catalog Number: PB9475

### About AQP4

Aquaporin 4 is found in the basolateral cell membrane of principal collecting duct cells and provides a pathway for water to exit these cells. The gene of AQP4 is mapped to 18q11.2-q12.1. Similar to other aquaporins, the AQP4 gene is composed of 4 exons encoding 127, 55, 27, and 92 amino acids separated by introns of 0.8, 0.3, and 5.2 kb. Unlike other aquaporins, an alternative coding initiation sequence (designated exon 0) was located 2.7 kb upstream of exon 1. When spliced together, M1 and the subsequent 10 amino acids are encoded by exon 0; the next 11 amino acids and M23 are encoded by exon 1. AQP4 is expressed in astrocytes and is upregulated by direct insult to the central nervous system. And AQP4 is the predominant water channel in the brain and has an important role in brain water homeostasis. It is abundant in mammalian brain and is concentrated in astrocytic foot processes at the blood-brain barrier.

### Overview

|                      |                                                                                                                                                                                                       |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product Name         | Anti-Aquaporin 4/AQP4 Antibody Picoband™                                                                                                                                                              |
| Reactive Species     | Human, Mouse, Rat                                                                                                                                                                                     |
| Description          | Boster Bio Anti-Aquaporin 4/AQP4 Antibody Picoband™ catalog # PB9475. Tested in IHC, WB applications. This antibody reacts with Human, Mouse, Rat.                                                    |
| Application          | IHC, WB                                                                                                                                                                                               |
| Clonality            | Polyclonal                                                                                                                                                                                            |
| Formulation          | Each vial contains 4 mg Trehalose, 0.9 mg NaCl and 0.2 mg Na <sub>2</sub> HPO <sub>4</sub> .                                                                                                          |
| 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           | P55087                                                                                                                                                                                                |

### Technical Details

|                               |                                                                                                                                                                                                               |
|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Immunogen                     | A synthetic peptide corresponding to a sequence at the C-terminus of human Aquaporin 4, different from the related mouse sequence by two amino acids, and from the related rat sequence by three amino acids. |
| Predicted Reactive Species    | Hamster                                                                                                                                                                                                       |
| 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 IHC(F).                   |
| 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 | <p>Dilute the sample so that the expected range of concentrations fall within the detection range of this kit.</p> <p>If the expected range of concentration is unknown, a pilot test should be conducted to decide the optimal dilution ratio for your samples.</p> <p>Some PubMed article(s) citing the expression level of this target are as follows:</p> <p>Boster Bio's internal QC testing used:</p> <p>Western blot, 0.1-0.5ug/ml, Mouse, Rat</p> <p>Immunohistochemistry (Paraffin-embedded Section), 2-5ug/ml, Human, Mouse, Rat, By Heat</p> <p>Immunohistochemistry (Frozen Section), 0.5-1ug/ml, Mouse, Rat</p> |

## Anti-Aquaporin 4/AQP4 Antibody Picoband™ (PB9475) Images

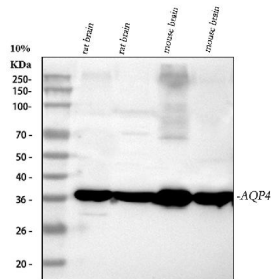


Figure 1. Western blot analysis of Aquaporin 4 using anti-Aquaporin 4 antibody (PB9475). Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours. The sample well of each lane was loaded with 30 ug of sample under reducing conditions.

Lane 1: rat brain tissue lysates,  
Lane 2: rat brain tissue lysates,  
Lane 3: mouse brain tissue lysates,  
Lane 4: 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-Aquaporin 4 antigen affinity purified polyclonal antibody (Catalog # PB9475) 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 Aquaporin 4 at approximately 37 kDa. The expected band size for Aquaporin 4 is at 35 kDa.

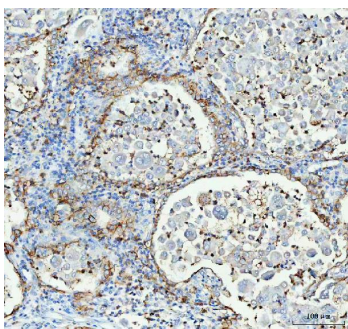


Figure 2. IHC analysis of Aquaporin 4 using anti-Aquaporin 4 antibody (PB9475).

Aquaporin 4 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-Aquaporin 4 Antibody (PB9475) 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.

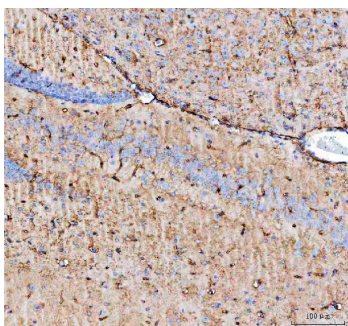


Figure 3. IHC analysis of Aquaporin 4 using anti-Aquaporin 4 antibody (PB9475).

Aquaporin 4 was detected in a paraffin-embedded section of mouse 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-Aquaporin 4 Antibody (PB9475) 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.

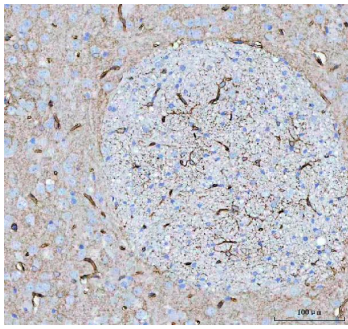


Figure 4. IHC analysis of Aquaporin 4 using anti-Aquaporin 4 antibody (PB9475).

Aquaporin 4 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-Aquaporin 4 Antibody (PB9475) 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.

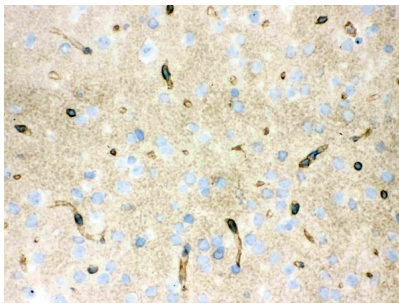


Figure 5. IHC analysis of Aquaporin 4 using anti-Aquaporin 4 antibody (PB9475).

Aquaporin 4 was detected in frozen section of Mouse Brain Tissue. The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1ug/ml rabbit anti-Aquaporin 4 Antibody (PB9475) 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 Streptavidin-Biotin-Complex (SABC)(Catalog # SA1022) with DAB as the chromogen.

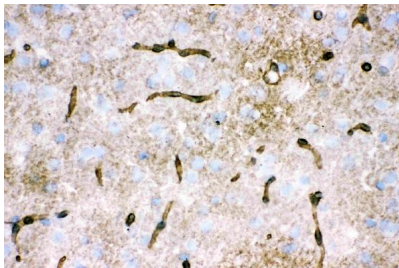


Figure 6. IHC analysis of Aquaporin 4 using anti-Aquaporin 4 antibody (PB9475).

Aquaporin 4 was detected in frozen section of Rat Brain Tissue. The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1ug/ml rabbit anti-Aquaporin 4 Antibody (PB9475) 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 Streptavidin-Biotin-Complex (SABC)(Catalog # SA1022) with DAB as the chromogen.

## 9 Publications Citing This Product

1. PubMed ID: 10.3171/2008.4.JNS17512, Brain edema after intracerebral hemorrhage in rats: the role of iron overload and aquaporin 4: Laboratory investigation
2. PubMed ID: 10.1096/fj.202100673R, Group 2 innate lymphoid cells suppress the pathology of neuromyelitis optica spectrum disorder
3. PubMed ID: 10.1080/09291016.2021.2007329, Expression of AQP1, AQP3, AQP4 and AQP5 in upper respiratory tract of buffaloes during different seasons

Visit [bosterbio.com/anti-aquaporin-4-picoband-trade-antibody-pb9475-boster.html](https://bosterbio.com/anti-aquaporin-4-picoband-trade-antibody-pb9475-boster.html) to see all 9 publications.

## 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-Aquaporin 4/AQP4 Antibody <sup>™</sup>