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Anti-Aquaporin 4 Picoband Antibody

Catalog # ABO12163

Specification

Anti-Aquaporin 4 Picoband Antibody - Product Information

Application	**WB, IHC-P, IHC-F**
Primary Accession	P55087
Host	**Rabbit**
Reactivity	**Human, Mouse, Rat**
Clonality	**Polyclonal**
Format	**Lyophilized**

Description
Rabbit IgG polyclonal antibody for Aquaporin-4(AQP4) detection. Tested with WB, IHC-P, IHC-F in Human;Mouse;Rat.

Reconstitution
Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

Anti-Aquaporin 4 Picoband Antibody - Additional Information

Gene ID 361

Other Names
Aquaporin-4, AQP-4, Mercurial-insensitive water channel, MIWC, WCH4, AQP4

Calculated MW
34830 MW KDa

Application Details
Immunohistochemistry(Frozen Section), 0.5-1 µg/ml, Mouse, Rat, Human
Immunohistochemistry(Paraffin-embedded Section), 0.5-1 µg/ml, Human, Mouse, Rat, By Heat
Western blot, 0.1-0.5 µg/ml, Mouse, Rat, Human

Subcellular Localization
Membrane; Multi-pass membrane protein.

Tissue Specificity
Brain - muscle >> heart, kidney, lung, and trachea.

Protein Name
Aquaporin-4

Contents
Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na2HPO4, 0.05mg NaN3.

Immunogen
A synthetic peptide corresponding to a sequence at the C-terminus of human Aquaporin 4 (295-323aa KPGVVHVIDVDRGEEKKGKDQSGEVLSSV), different from the related mouse sequence by two amino acids, and from the related rat sequence by three amino acids.

Purification
Immunogen affinity purified.

Cross Reactivity
No cross reactivity with other proteins

Storage

At -20˚C for one year. After r˚Constitution, at 4˚C for one month. It˚Can also be aliquotted and stored frozen at -20˚C for a longer time.Avoid repeated freezing and thawing.

Sequence Similarities
Belongs to the MIP/aquaporin (TC 1.A.8) family.

Anti-Aquaporin 4 Picoband Antibody - Protein Information

Name AQP4

Function
Forms a water-specific channel (PubMed:19383790, PubMed:7559426, PubMed:8601457). Plays an important role in brain water homeostasis (PubMed:37143309). It is involved in glymphatic solute transport and is required for a normal rate of water exchange across the blood brain interface. Required for normal levels of cerebrospinal fluid influx into the brain cortex and parenchyma along paravascular spaces that surround penetrating arteries, and for normal drainage of interstitial fluid along paravenous drainage pathways. Thereby, it is required for normal clearance of solutes from the brain interstitial fluid, including soluble beta-amyloid peptides derived from APP. Plays a redundant role in urinary water homeostasis and urinary concentrating ability (By similarity).

Cellular Location
Cell membrane; Multi-pass membrane protein. Basolateral cell membrane {ECO:0000250|UniProtKB:P55088}; Multi-pass membrane protein. Endosome membrane {ECO:0000250|UniProtKB:P47863}. Cell membrane, sarcolemma; Multi-pass membrane protein. Cell projection {ECO:0000250|UniProtKB:P47863}. Note=Activation of the vasopressin receptor AVPR1A triggers AQP4 phosphorylation at Ser-180 and promotes its internalization from the cell membrane. Detected on brain astrocyte processes and astrocyte endfeet close to capillaries {ECO:0000250|UniProtKB:P47863}

Tissue Location
Detected in skeletal muscle (PubMed:29055082). Detected in stomach, along the glandular base region of the fundic gland (at protein level) (PubMed:8601457). Detected in brain, lung and skeletal muscle, and at much lower levels in heart and ovary (PubMed:7559426, PubMed:8601457).

Anti-Aquaporin 4 Picoband Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides

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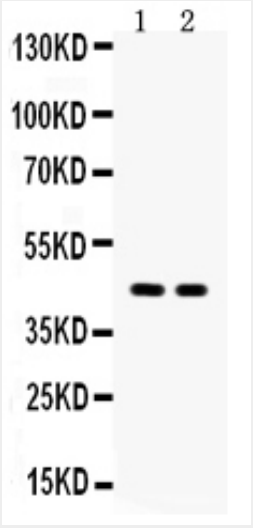
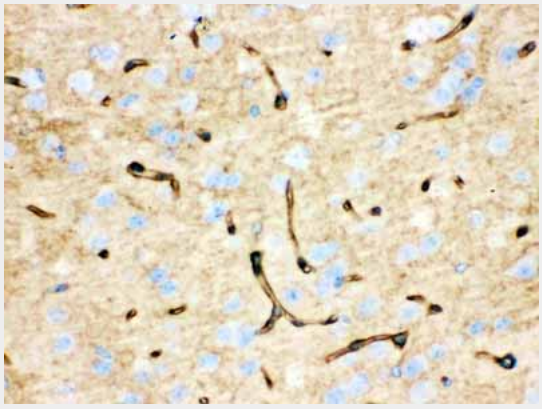
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

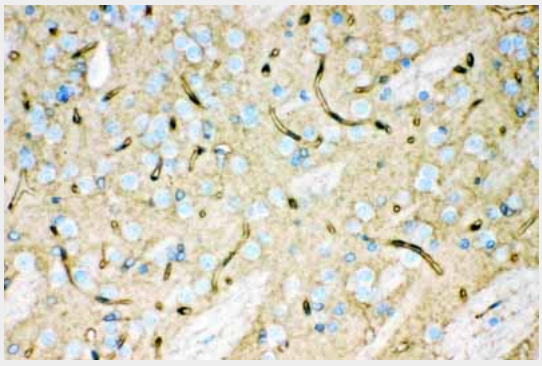
Anti-Aquaporin 4 Picoband Antibody - Images



Anti- Aquaporin 4 Picoband antibody, ABO12163, Western blottingAll lanes: Anti Aquaporin 4 (ABO12163) at 0.5ug/mlLane 1: Rat Brain Tissue Lysate at 50ugLane 2: Mouse Brain Tissue Lysate at 50ugPredicted bind size: 35KDObserved bind size: 45KD



Anti- Aquaporin 4 Picoband antibody, ABO12163, IHC(P)IHC(P): Mouse Brain Tissue



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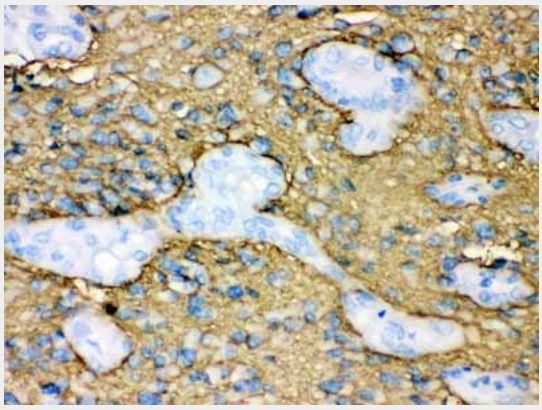
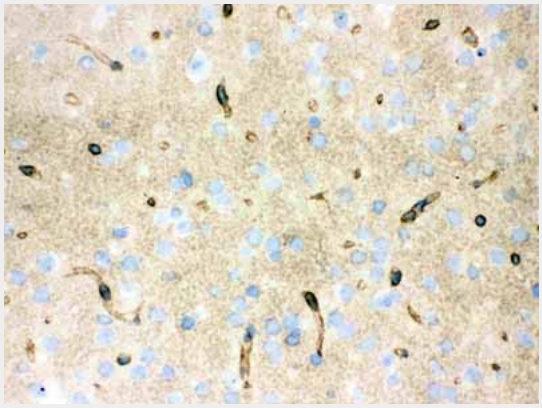
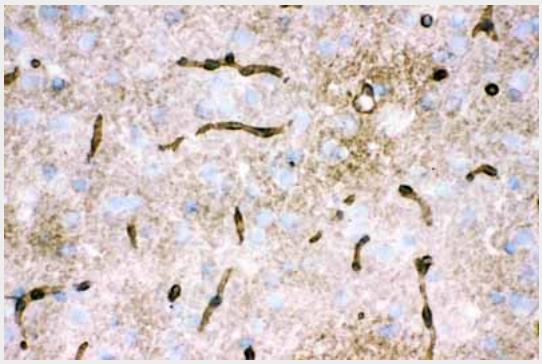
Anti- Aquaporin 4 Picoband antibody, ABO12163, IHC(P)IHC(P): Rat Brain Tissue



Anti- Aquaporin 4 Picoband antibody, ABO12163, IHC(P)IHC(P): Human Glioma Tissue



Anti- Aquaporin 4 Picoband antibody, ABO12163, IHC(F)IHC(F): Mouse Brain Tissue



Anti- Aquaporin 4 Picoband antibody, ABO12163, IHC(F)IHC(F): Rat Brain Tissue

Anti-Aquaporin 4 Picoband Antibody - Background

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.