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Anti-Aquaporin 4 Antibody
Catalog # ABO11240

Specification

Anti-Aquaporin 4 Antibody - Product Information

Application	**WB, IHC-P**
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 in Human;Mouse;Rat.

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

Anti-Aquaporin 4 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(Paraffin-embedded Section), 0.5-1 µg/ml, Human, Rat, Mouse, By Heat
Western blot, 0.1-0.5 µg/ml, Human, Rat, Mouse

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 Thimerosal, 0.05mg NaN3.

Immunogen
A synthetic peptide corresponding to a sequence at the C-terminus of human Aquaporin 4(258-274aa FKRRFKEAFSKAAQQTK), different from the related rat and mouse sequences by two 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 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 Antibody - Protocols

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

- Western Blot
- Blocking Peptides

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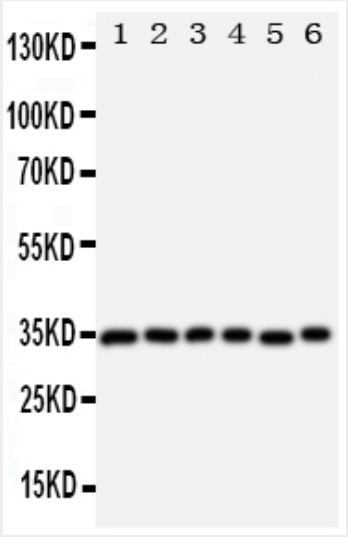
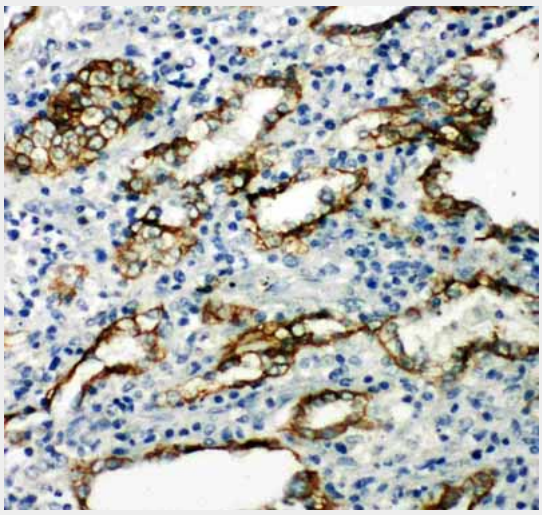
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

Anti-Aquaporin 4 Antibody - Images



Anti-Aquaporin 4 antibody, ABO11240, Western blottingLane 1: Rat Heart Tissue LysateLane 2: Rat Brain Tissue LysateLane 3: Rat Kidney Tissue LysateLane 4: HT1080 Cell Lysate Lane 5: MCF-7 Cell LysateLane 6: COLO320 Cell Lysate



Anti-Aquaporin 4 antibody, ABO11240, IHC(P)IHC(P): Human Lung Cancer Tissue

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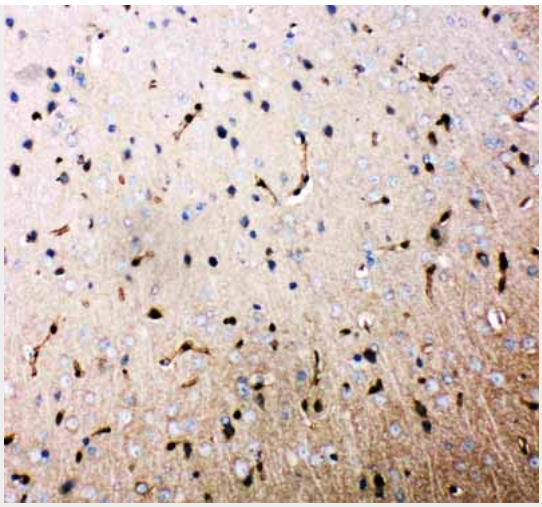

Anti-Aquaporin 4 antibody, ABO11240, IHC(P)IHC(P): Rat Brain Tissue

Anti-Aquaporin 4 Antibody - Background

AQP4(Aquaporin 4), also known as MERCURIAL-INSENSITIVE WATER CHANNEL; MIWC, is protein which in humans is encoded by the AQP4 gene. The aquaporins are a family of water-selective membrane channels found in animals, plants, and microorganisms. AQP4 is the predominant water channel in the brain and has an important role in brain water homeostasis. By fluorescence in situ hybridization, Lu et al.(1996) determined that the AQP4 gene maps to 18q11.2-q12.1. By interspecific backcross analysis, Turtzo et al.(1997) mapped the mouse Aqp4 gene to the proximal region of chromosome 18. Analyzing the expression of AQP4 in mammalian skeletal muscle, Frigeri et al.(1998) found that, in immunohistochemical experiments, affinity-purified AQP4 antibodies stained selectively the sarcolemma of fast-twitch fibers. Immunocytochemistry revealed strong AQP4 water channel expression in Muller cells in mouse retina and in fibrous astrocytes in optic nerve.