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AQP1 Antibody

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP50868

Product Information

Application	WB, IHC-P, IHC-F, IF, E
Primary Accession	P29972
Reactivity	Human, Mouse, Rat, Sheep, Dog
Host	Rabbit
Clonality	Polyclonal
Calculated MW	28526
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human AQP1
Epitope Specificity	181-269/269
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SUBCELLULAR LOCATION	Membrane; Multi-pass membrane protein.
SIMILARITY	Belongs to the MIP/aquaporin (TC 1.A.8) family.
SUBUNIT	Homotetramer. Interacts with EPHB2; involved in endolymphproduction in the inner ear (By similarity).
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	Aquaporin 1 is a 28kD integral membrane protein which was originally identified in red blood cells and renal proximal 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.

Additional Information

Gene ID	358
Other Names	Aquaporin-1, AQP-1, Aquaporin-CHIP, Urine water channel, Water channel protein for red blood cells and kidney proximal tubule, AQP1, CHIP28
Target/Specificity	Expressed in a number of tissues including erythrocytes, renal tubules, retinal pigment epithelium, heart, lung, skeletal muscle, kidney and pancreas. Weakly expressed in brain, placenta and liver.
Dilution	WB=1:500-2000,IHC-P=1:100-500,IHC-F=1:100-500,IF=1:100-500,ELISA=1:5000-10000
Format	0.01M TBS(pH7.4) with 1% BSA, 0.09% (W/V) sodium azide and 50% Glyce

Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

Protein Information

Name	AQP1 (HGNC:633)
Function	Forms a water channel that facilitates the transport of water across cell membranes, playing a crucial role in water homeostasis in various tissues (PubMed:1373524, PubMed:23219802). Could also be permeable to small solutes including hydrogen peroxide, glycerol and gases such as amonnia (NH3), nitric oxide (NO) and carbon dioxide (CO2) (PubMed:16682607, PubMed:17012249, PubMed:19273840, PubMed:33028705, PubMed:8584435). Recruited to the ankyrin-1 complex, a multiprotein complex of the erythrocyte membrane, it could be part of a CO2 metabolon, linking facilitated diffusion of CO2 across the membrane, anion exchange of Cl(-)/HCO3(-) and interconversion of dissolved CO2 and carbonic acid in the cytosol (PubMed:17012249, PubMed:35835865). In vitro, it shows non-selective gated cation channel activity and may be permeable to cations like K(+) and Na(+) in vivo (PubMed:36949749, PubMed:8703053).
Cellular Location	Cell membrane; Multi-pass membrane protein
Tissue Location	Detected in erythrocytes (at protein level). Expressed in a number of tissues including erythrocytes, renal tubules, retinal pigment epithelium, heart, lung, skeletal muscle, kidney and pancreas. Weakly expressed in brain, placenta and liver

Background

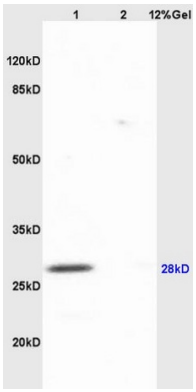
Forms a water-specific channel that provides the plasma membranes of red cells and kidney proximal tubules with high permeability to water, thereby permitting water to move in the direction of an osmotic gradient.

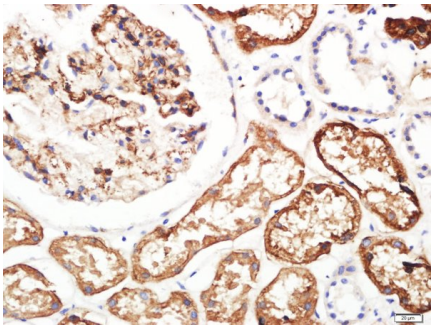
References

Preston G.M.,et al.Proc. Natl. Acad. Sci. U.S.A. 88:11110-11114(1991).
Moon C.,et al.J. Biol. Chem. 268:15772-15778(1993).
Ruiz A.C.,et al.Biochim. Biophys. Acta 1282:174-178(1996).
Li X.,et al.Biochem. Mol. Biol. Int. 32:371-377(1994).
Ota T.,et al.Nat. Genet. 36:40-45(2004).

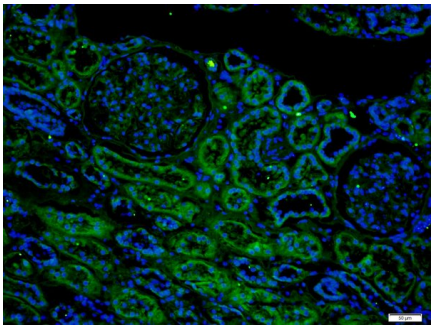
Images

Lane 1: mouse heart lysates Lane 2: mouse lung lysates probed with Anti AQP1/CHIP Polyclonal Antibody, Unconjugated AP50868 at 1:200 in 4˚C. Followed by conjugation to secondary antibody at 1:3000 90min in 37˚C. Predicted band 28kD. Observed band size: 28kD.





Paraformaldehyde-fixed, paraffin embedded human kidney; Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 minutes; Blocking buffer (normal goat serum) at 37°C for 30min; Antibody incubation with AQP1 Polyclonal Antibody, Unconjugated (AP50868) at 1:200 overnight at 4°C, followed by a conjugated secondary for 20 minutes and DAB staining.



Paraformaldehyde-fixed, paraffin embedded human kidney; Antigen retrieval by boiling in sodium citrate buffer (pH6) for 15min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 minutes; Blocking buffer (normal goat serum) at 37°C for 30min; Antibody incubation with AQP1 Polyclonal Antibody, Unconjugated AP50868 at 1:200 overnight at 4°C, followed by a conjugated secondary antibody at [1:500] for 90 minutes and DAPI staining of the nuclei.