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AQP2 Antibody

Catalog # ASC11742

Product Information

Application	WB, IF, E, IHC-P
Primary Accession	P41181
Other Accession	NP_000477, 4502179
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	28837
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	AQP2 antibody can be used for detection of AQP2 by Western blot at 1 - 2 g/ml. Antibody can also be used for Immunohistochemistry starting at 5 g/mL. For immunofluorescence start at 20 g/mL.

Additional Information

Gene ID	359
Other Names	Aquaporin-2, AQP-2, ADH water channel, Aquaporin-CD, AQP-CD, Collecting duct water channel protein, WCH-CD, Water channel protein for renal collecting duct, AQP2
Target/Specificity	AQP2; AQP2 antibody is human, mouse and rat reactive. This antibody is predicted to not cross-react with other members of the aquaporin protein family.
Reconstitution & Storage	AQP2 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year.
Precautions	AQP2 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	AQP2 (HGNC:634)
Function	Forms a water-specific channel that provides the plasma membranes of renal collecting duct with high permeability to water, thereby permitting water to move in the direction of an osmotic gradient (PubMed:15509592, PubMed:7510718, PubMed:7524315, PubMed:8140421, PubMed:8584435). Plays an essential role in renal water homeostasis (PubMed:15509592, PubMed:7524315, PubMed:8140421). Could also be permeable to glycerol (PubMed:8584435).

Cellular Location	Apical cell membrane; Multi-pass membrane protein. Basolateral cell membrane {ECO:0000250|UniProtKB:P34080}; Multi-pass membrane protein. Cell membrane; Multi-pass membrane protein. Cytoplasmic vesicle membrane; Multi-pass membrane protein. Golgi apparatus, trans-Golgi network membrane; Multi-pass membrane protein. Note=Shuttles from vesicles to the apical membrane (PubMed:15509592). Vasopressin-regulated phosphorylation is required for translocation to the apical cell membrane (PubMed:15509592). PLEKHA8/FAPP2 is required to transport AQP2 from the TGN to sites where AQP2 is phosphorylated (By similarity) {ECO:0000250|UniProtKB:P34080, ECO:0000269|PubMed:15509592}
Tissue Location	Expressed in collecting tubules in kidney medulla (at protein level) (PubMed:7510718). Detected in kidney (PubMed:7510718).

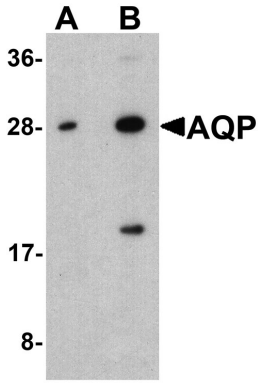
Background

Aquaporins are membrane proteins that serve in the transfer of water and small solutes across cellular membranes. One such aquaporin, aquaporin-2 (AQP2) is located in the kidney collecting tubule and plays a critical role in water reabsorbtion (1). AQP2 is mainly localized in intracellular vesicles but upon stimulation with anti-diuretic hormone (ADH), AQP2 is translocated to the apical plasma membrane by exocytic fusion of AQP2-bearing vesicles (2). Mutations in this gene have been linked to autosomal dominant and recessive forms of nephrogenic diabetes insipidus (3).

References

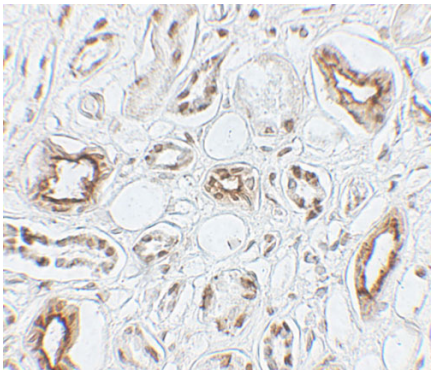
Denker BM, Smith BL, Kuhada FP, et al. Identification, purification, and partial characterization of a novel Mr 28,000 integral membrane protein from erythrocytes and renal tubules. J. Biol. Chem. 1988; 263:15634-42.
Barile M, Pisitkun T, Yu MJ, et al. Large scale protein identification in intracellular aquaporin-2 vesicles from renal inner medullary collecting duct. Mol. Cell Proteomics 2005; 4:1095-106.
Bockenhauer D and Bichet DG. Inherited secondary nephrogenic diabetes insipidus: concentrating on humans. Am. J. Physiol. Renal Physiol. 2013; 304:F1037-42.

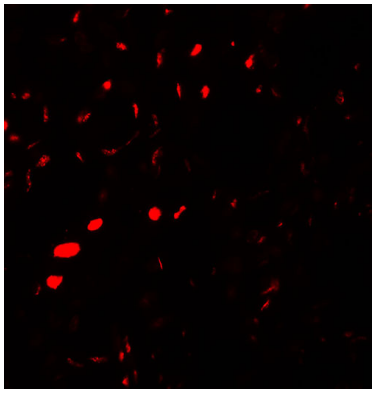
Images



Western blot analysis of AQP2 in A431 cell lysate with AQP2 antibody at (A) 1 and (B) 2 µg/ml.

Immunohistochemistry of AQP2 in human kidney tissue with AQP2 antibody at 5 µg/mL.





Immunofluorescence of AQP2 in human kidney tissue with AQP2 antibody at 20 µg/mL.

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