10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

AQP2 Antibody
Catalog # ASC11742

Specification

AQP2 Antibody - Product Information

Application	**WB, IHC-P, IF, E**
Primary Accession	P41181
Other Accession	NP_000477, 4502179
Reactivity	**Human, Mouse, Rat**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**IgG**
Calculated MW	**Predicted: 30 kDa** **Observed: 28 kDa KDa**
Application Notes	**AQP2 antibody can be used for detection of AQP2 by Western blot at 1 - 2 µg/ml. Antibody can also be used for Immunohistochemistry starting at 5 µg/mL. For immunofluorescence start at 20 µg/mL.**

AQP2 Antibody - Additional Information

Gene ID **359**

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.

AQP2 Antibody - 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:<a

href="http://www.uniprot.org/citations/7524315" target="_blank">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}

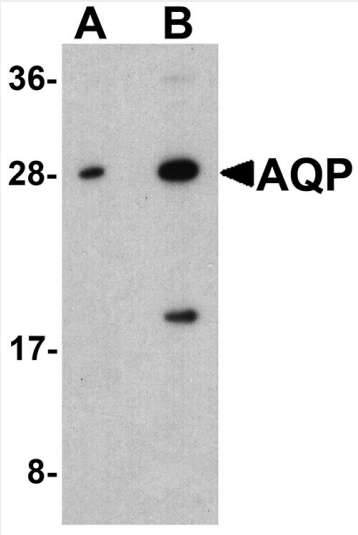
Tissue Location
Expressed in collecting tubules in kidney medulla (at protein level) (PubMed:7510718). Detected in kidney (PubMed:7510718).

AQP2 Antibody - Protocols

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

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

AQP2 Antibody - Images



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

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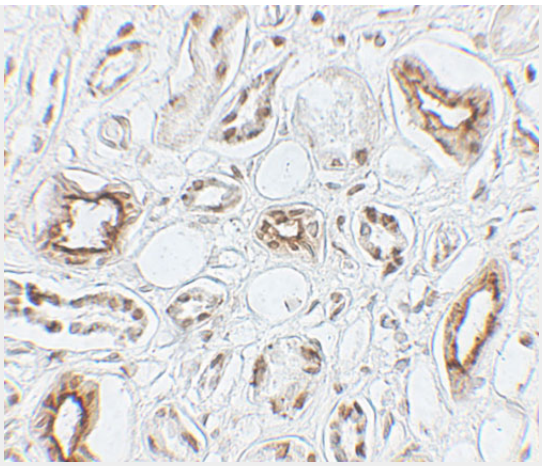
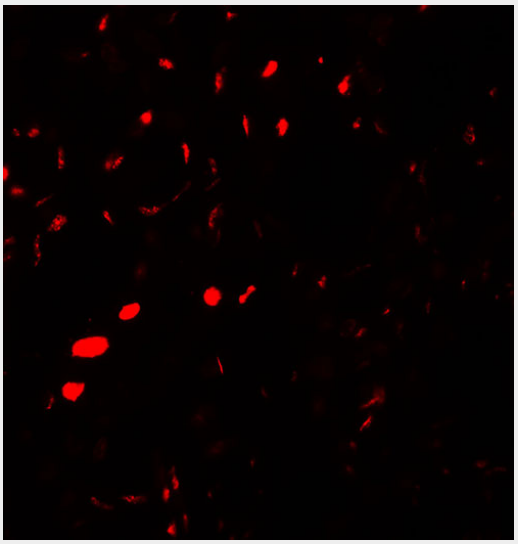


Immunohistochemistry of AQP2 in human kidney tissue with AQP2 antibody at 5 µg/mL.



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

AQP2 Antibody - 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).

AQP2 Antibody - 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.