Revision 1

Store at -20C

#3487

AQP2 Antibody

Cell Signaling TECHNOLOGY®

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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W	H M R	Endogenous	26	Rabbit	#P41181	359

Product Usage Information

Application	Dilution
Western Blotting	1:1000

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at –20°C. Do not aliquot the antibody.

Specificity/Sensitivity

AQP2 Antibody detects endogenous levels of total AQP2 protein.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Gln263 of human AQP2. Antibodies are purified by peptide affinity chromatography.

Background

Aquaporin 2 (AQP2) is a water transport protein that forms water channels in kidney tubules and plays a predominant role in controlling organism water homeostasis (1). Members of the aquaporin family are multiple pass transmembrane proteins that form homotetramers to facilitate the flow of water across the plasma membrane. At least thirteen aquaporins have been indentified to date (AQP0 through AQP12) and together this family of small, hydrophobic proteins plays a role in an array of biological processes that include urine formation, cell motility, fertilization, cell junction formation and regulation of overall water homeostasis (2). AQP2 tetramers form water channels that facilitate water transport and excretion in the kidney (3). This transport protein is localized to the plasma membrane is response to endocrine signaling. Posterior pituitary hormones arginine vasopressin (AVP) and ADH regulate osmotic water cell permeability by triggering phosphorylation and subsequent exocytosis of AQP2 (1,4). Mutations in the corresponding AQP2 gene cause a rare form of diabetes known as nephrogenic diabetes insipidus. This autosomal dominant disorder is characterized by abnormal water reabsorption by kidney tubules due, in part, to either nonfunctional or mislocalized AQP2 protein (5).

Background References

1. Takata, K. et al. (2008) *Histochem Cell Biol* 130, 197-209.
2. Verkman, A.S. and Mitra, A.K. (2000) *Am J Physiol Renal Physiol* 278, F13-28.
3. Kamsteeg, E.J. et al. (2000) *J Cell Biol* 151, 919-30.
4. van Balkom, B.W. et al. (2002) *J Biol Chem* 277, 41473-9.
5. Loonen, A.J. et al. (2008) *Semin Nephrol* 28, 252-65.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v nonfat dry milk, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting

Cross-Reactivity Key

H: Human **M:** Mouse **R:** Rat

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Limited Uses

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