

AQP4x Antibody

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

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	Entrez-Gene Id:
W	M R	Endogenous	32	Rabbit	11829

Product Usage Information**Application**

Western Blotting

Dilution

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

AQP4x Antibody recognizes endogenous levels of total mouse AQP4x protein with an extended C-terminal tract.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues near the carboxy terminus of mouse AQP4x protein. Antibodies are purified by protein A and peptide affinity chromatography.

Background

Aquaporins (AQP) are integral membrane proteins that serve as channels in the transfer of water and small solutes across the membrane. There are 13 isoforms of AQP that express in different types of cells and tissues (1,2). AQP1 is found in blood vessels, kidney, eye, and ear. AQP2 is found in the kidney, and it has been shown that the lack of AQP2 results in diabetes (1,3). AQP4 is present in the brain, where it is enriched in astrocytes (1,2,4). AQP5 is found in the salivary and lacrimal gland, AQP6 in intracellular vesicles in the kidney, AQP7 in adipocytes, AQP8 in kidney, testis, and liver, AQP9 is present in liver and leukocytes, and AQP10-11 in the intestine (1,3,4). AQPs are essential for the function of cells and organs. It has been shown that AQP1 and AQP4 regulate the water homeostasis in astrocytes, preventing cerebral edema caused by solute imbalance (5). Several studies have shown the involvement of AQPs in the development of inflammatory processes, including cells of innate and adaptive immunity (6,7).

The mouse AQP4x has an extended sequence at the C-terminal (ex) as a result of a codon readthrough during alternative splicing (8). The C-terminal extension in the mouse AQP4x changes the localization to a more perivascular polarization (8). Programmed translational readthrough could occur also in human AQP4x (9).

Background References

1. Takata, K. et al. (2004) *Prog Histochem Cytochem* 39, 1-83.
2. Echevarría, M. and Ilundáin, A.A. (1998) *J Physiol Biochem* 54, 107-18.
3. Gomes, A. et al. (2018) *Front Chem* 6, 238.
4. Xu, M. et al. (2017) *Adv Exp Med Biol* 969, 81-103.
5. Kobayashi, H. et al. (2004) *J Pharmacol Sci* 96, 264-70.
6. Meli, R. et al. (2018) *Front Physiol* 9, 101.
7. Ishibashi, K. et al. (1998) *Biochem Biophys Res Commun* 244, 268-74.
8. Sapkota, D. et al. (2019) *Cell Rep* 26, 594-607.e7.
9. De Bellis, M. et al. (2017) *Glia* 65, 790-803.

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 BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting

Cross-Reactivity Key

M: Mouse **R:** Rat

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