ALPHA DIAGNOSTIC INTERNATIONAL

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Product Specification Sheet

Aquaporin 9 Antibodies

Cat # AQP91-P	Rat AQP9 Control/blocking peptide	**SIZE**: 100 ug
Cat # AQP91-S	Rabbit Anti-Rat AQP9 antiserum # 1	**SIZE**: 100 ul
Cat # AQP91-A	Rabbit Anti-Rat AQP9 IgG # 1 (**aff pure**)	**SIZE**: 100 ug

Water is a critical component of all living cells. Interestingly, tissue membranes show a great degree of water permeability. Mammalian red cells, renal proximal tubules, and descending thin limb of Henle are extraordinarily permeable to water. Water crosses hydrophobic plasma membranes either by simple diffusion or through a facilitative transport mechanism mediated by special protein "aquaporins". Over the last decade, genes for several members of aquaporin family (AQP0, AQP1-Aqp10) have been cloned, expressed, and their distribution studied in many tissues.

AQP9 (295aa) is primarily expressed in peripheral leukocytes. It is permeable to water and urea. The individual members of aquaporin family have identical predicted secondary structures with up to 6 highly conserved hydrophobic membrane spanning domains (about 18-25 AA each) and two conserved NPA motifs. However, N/C-terminal regions of AQPs are only ~ 20% conserved.

FUNCTION: Forms a channel with a broad specificity. Mediates passage of a wide variety of non-charged solutes including carbamides, polyols, purines, and pyrimidines in a phloretin- and mercury-sensitive manner, whereas amino acids, cyclic sugars, Na(+), K(+), Cl(-), and deprotonated monocarboxylates are excluded. Also permeable to urea but not to glycerol.
SUBCELLULAR LOCATION:; Multi-pass membrane protein.
DOMAIN: Aquaporins contain two tandem repeats each containing three membrane-spanning domains and a pore-forming loop with the signature motif Asn-Pro-Ala (NPA).
SIMILARITY: Belongs to the MIP/aquaporin (TC 1.A.8) family

Source of Antigen and Antibodies

Antigen	18aa peptide of rat AQP9 (protein accession #P56627, refs 1) ; **Designated (AQP91-P or control peptide or blocking peptide**) conjugated to KLH; **Epitope location**~ C-terminal, Cytoplasmic domain
Ab Host/type	Rabbit, Polyclonal unpurified antiserum (#**AQP91**-S) and IgG, purified over antigen-agarose (Cat # **AQP91**-A)
2-Ab	Cat # 20320, goat anti-rabbit IgG-HRP (AP, biotin, FITC conjugates also available).
-ve control IgG	# 20009-1, Rabbit (non-immune) IgG, purified, suitable for ELISA, Western, IHC as –ve control

Form & Storage of Antibodies/Peptide Control

Antiserum (unpurified)
100ul solution lyophilized powder
Supplied in Buffer: 0.05% azide
Reconstitute powder in 100 ul PBS

Affinity pure IgG
100 ug/100ul solution lyophilized powder
Supplied in **Buffer**: PBS+0.1% BSA
Reconstitute powder in PBS at 1mg/ml

Control/blocking peptide
100 ug/100 ul solution lyophilized powder
Supplied in Buffer: PBS pH 7.5,
Reconstitute powder in PBS at 1 mg/ml.

Storage
Short-term: unopened, undiluted liquid vials at -20OC and powder at 4oC or -20oC..

Long-term: at –20C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

Stability: 6-12 months at –20oC or below.
Shipping: 4oC for solutions and room temp for powder

Recommended Usage

Western Blotting (1:1K-5K for neat serum and 1-10 µg/ml for affinity pure using Chemiluminescence technique). See published papers below.

ELISA (1:100K; using 50-100 ng control peptide/well).

Histochemistry & Immunofluorescence: we recommend the use of affinity purified antibody at 2-10 µg/ml (2). Adherent cells can be fixed in 50% methanol-50% acetone or 1% paraformaldehyde (3). See published papers below.

Specificity & Cross-reactivity

Rat AQP91-P peptide is 72% and 94% conserved in human and mouse AQP9 respectively. The antibodies have been shown to recognize mouse, rat, and human AQP9 (see published refs 2). Antibody cross-reactivity in various species is not known. Control peptide, because of its low mol. Wt (<3 kDa), is not suitable for Western. It should be used for ELISA or antibody blocking experiments (use 5-10 ug control peptide per 1 ug of aff pure IgG or 1 ul antiserum) to confirm antibody specificity.

General References: (1) Ishibashi K et al (997) JBC 272, 20782.

(2) Citations of ADI's Antibodies (see web site for updated list)

Liu Z et al, 2002, PNAS 99, 6053-6058, WB,, ,
Hubert C 2002, JBC 277: 22710, WB, IHC/IF, IP
Wang, 2004, Am J of Ob. Gynecol. 191, 2160, IHC,
Okada S, 2003, FEBS Letters, 540, 157, WB,, IHC,
Nicchia GP, 2001, J. Histochem. Cytochem. 49: 1547, WB,, IHC,,
Liu Z, 2004, BBRC 316, 1178-1185, WB,, ,
Barcroft, 2003, Develop. Biol. 256, 342, WB,, IHC,
Badaut J, 2004, Neuroscience, In Press, WB,, IHC,
Kenney, 2004, J . Histochem. Cytochem., 52: 1341 -1350., IHC,

*This product is for in vitro research use only.

Related material available from ADI
Antibodies for AQP1-9, AQP-AP, & rUT2; VMAT1, VMAT2, Vasopressin receptor (AVPR-V1 and V2)
AQP91-S-A-P 70910A

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