

PRODUCT SPECIFICATION SHEET

**Aquaporin 8 Antibodies**

<b>Cat # AQP81-P</b>	Rat AQP8 Control/blocking peptide	<b>SIZE:</b> 100 ug
<b>Cat # AQP81-S</b>	Rabbit Anti-Rat AQP8 antiserum # 1	<b>SIZE:</b> 100 ul
<b>Cat # AQP81-A</b>	Rabbit Anti-Rat AQP8 IgG # 1 ( <b>aff pure</b> )	<b>SIZE:</b> 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 "aquaporin".

A new water channel, **AQP8**, has been identified in rat pancreas and testis by homology cloning (1). AQP8 (263 aa; 28 kDa) is also found in liver, colon and salivary glands. AQP8 is expressed in all stages of spermatogenesis. Unlike other AQP, AQP8 has unusually long N-terminus and a short C-terminus. AQP families of proteins are predicted to contain six transmembrane domains. The N and C-terminus are predicted to be cytoplasmic. AQP8 has significant homology to various AQPs:  $\gamma$ -TIP (plant water channel, 37%); AQP2 and MIP (37%), AQP1, AQP4, and AQP5 (30-34%); AQP3 (26%). AQP8 does not facilitate glycerol transport.

**FUNCTION:** Forms a water-specific channel; mercury-sensitive. It may have an important role in spermatogenesis, in fertilization, and in the secretion of pancreatic juice and saliva.

**SUBCELLULAR LOCATION:** Multi-pass membrane protein.

**TISSUE SPECIFICITY:** Highly expressed in sperm, pancreas and liver. Some expression has been found in salivary gland and absorptive colonic epithelial cells.

**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**

<b>Antigen</b>	16-aa peptide from <b>rat AQP8</b> (protein accession #P56405, refs 1) <b>Designation (AQP81-P, control/blocking peptide); Epitope location</b> ~ C-terminal, Cytoplasmic domain
<b>Ab Host/type</b>	Rabbit, Polyclonal unpurified antiserum (AQP81-S) and IgG, purified over antigen-agarose (Cat # AQP81-A)
<b>2-Ab</b>	Cat # 20320, goat anti-rabbit IgG-HRP (AP, biotin, FITC conjugates also available).
<b>-ve control IgG</b>	# 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.

**Recommended Usage**

We recommend the use of 0.5-1% milk in all primary/secondary antibody-enzyme conjugate incubations in order to suppress non-specific bands.

**Western Blotting** 1:1K-5K for neat serum and 1-10 ug/ml for affinity pure antibody using ECL.

**ELISA:** Control peptide can be used to coat ELISA plates at 1 ug/ml and detected with antibodies (1:10-50K for neat serum and 0.5-1 ug/ml for affinity pure).

**Histochemistry & Immunofluorescence:** we recommend the use of affinity purified antibody at 2-10 ug/ml in paraformaldehyde fixed sections of tissues. Neat serum can be used at 1:500 or more.

**Specificity & Cross-reactivity**

The 16 AA rAQP81 peptide was found unique to AQP8 with 93% homology to mouse and 81% to human. 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) Koyama, Yu et al (1997) JBC 272, 30329; Ishibashi K et al (1997) BBRC 714, 714-718.

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

Elkjær M-L, 2002, Am J Physiol Renal Physiol 281: F1047, WB/IHC  
Barcroft LC, 2003, Developmental Biol. 256, 342-354. WB, IHC  
Ueno Y 2004, Liver Int. 23, 449-459, WB, IF  
Huebert RC, 2002, JBC 277, 22710-22717, WB, IHC, IP  
Wellner RB, 2000, Eur. J. Physiol. 441, 49-56, WB, IHC,

*\*This product is for In vitro research use only.*

**Related material available from ADI**

AQP81-S-A-P

70910A

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