ALPHA DIAGNOSTIC INTERNATIONAL

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Product Specification Sheet

Aquaporin 5 (AQP5) Antibodies

Cat # AQP51-P	Rat AQP5 Control/blocking peptide	**SIZE**: 100 ug
Cat # AQP51-S	Rabbit Anti-rat AQP5 antiserum #1	**SIZE**: 100 ul
Cat # AQP51-A	Rabbit Anti-rat AQP5 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 "**aquaporin**". Over the last decade, genes for several members of aquaporin family (AQP1-9 and AQPAP) have been cloned, expressed, and their distribution studied in many tissues. **AQP5** (human, mouse, and rat 265 aa) is found in several epithelial tissues (salivary and lachrymal glands, corneal epithelium in the eye and lung). It is implicated in generation of saliva, tears, and pulmonary secretions. AQP families of proteins are predicted to contain six transmembrane domains.

FUNCTION: Forms a water-specific channel. Implicated in the generation of saliva, tears, and pulmonary secretions.
SUBCELLULAR LOCATION:; Multi-pass membrane protein.
TISSUE SPECIFICITY: Salivary glands, lacrimal glands, corneal epithelium in eye, trachea and lung.
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)
Protein name Aquaporin-5 ; Synonym AQP-5
Gene name Name: Aqp5

Source of Antigen and Antibodies

Antigen	17-aa peptide of Rat AQP5 (Gene Accession #P47864; **Designated (AQP51-P or control peptide) conjugated to KLH; epitope location ~ C-terminus**
Ab Host/type	Rabbit, polyclonal, Unpurified antiserum (cat # AQP51-S) Aff pure IgG1 (**cat #AQP51-A**) purified over antigen-agarose column
2-Ab	**Goat Anti-rabbit IgG-HRP** cat # 20320 (AP, biotin, FITC conjugates also available)
-ve control	**# 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 (see published refs in 2).

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 ((see published refs in 2).

Specificity & Cross-reactivity

The rat AQP51-P peptide is 100% conserved in mouse, and 80% in human, 76% in ovine AQP5. However, no significant homology is seen with other AQPs or any other protein. Antibody cross-reactivity in various species has not been studied. 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) Raina, S. et al. (1995) *J. Biol. Chem.* **270**:1908-1912; Lee MD et al (1996) JBC 271, 8599-8604; Krane CM et al (1999) Mamm. Genome 10, 498-505.

Citations of ADI's antibodies for AQP5 (updated list at the web site).

Borok Z, 2002, AJP Lung Cell Mol Physiol 282: L599,		Wb	IF
Blank M, 2004, Mol. Cell. Neurosci. 26, 530-543,		IF	
Chen J	2004, Lab. Invest. 84, 727 - 735	WB	
Li J	2004, Lab. Invest. 84, 1430 - 1438	WB	IHC
Borok Zea, 1998, Am. J. Respir. Cell Mol. Bio.	18: 554-561	WB,	
Beroukas D, 2001, Lancet 358, 1875-1876			IHC,
Larina O	2005, J. Cell Sci. 118: 4131 - 4139	IF	
Lindsay LA, 2004	Acta Histochemica 106, 299-307,		IF
DaSilva N2005	Biol Reprod, Oct 2005	WB	IF
Rabb H, 2003	Kidney Intl.. 63(2):600-606	WB	
Wang W 2003	Calcified T Intl. 72(3):222-7	WB	

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

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