ALPHA DIAGNOSTIC INTERNATIONAL

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PRODUCT SPECIFICATION SHEET

Aquaporin 7 Antibodies

Cat # AQP71-P	Rat AQP7 control/blocking peptide #1	**SIZE**: 100 ug
Cat # AQP71-S	Rabbit Anti-Rat AQP7 antiserum # 1	**SIZE**: 100 ul
Cat # AQP71-A	Rabbit Anti-Rat AQP7 IgG 1 #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 **(AQP0-AQP10)** have been cloned, expressed, and their distribution studied in many tissues.

AQP7 (rAQP7, 269aa) is abundantly expressed in testis. It is involved in water, glycerol and urea transport. AQP7 is also found in adipose tissue, kidney, and heart. AQP6 has highest homology (48%) with AQP3. AQP7 has been localized to in the spermatids and at maturing sperms. AQP families of proteins are predicted to contain six transmembrane domains. The N and C-terminus are predicted to be cytoplasmic.

FUNCTION: Forms a channel for water, glycerol and urea. It is possible that testis-specific glycerol kinase and AQP7 are functionally coupled and that the major function of AQP7 is glycerol transport rather than water transport. May have an important role in spermatogenesis and possibly in fertilization. It is mercury-resistant.
SUBCELLULAR LOCATION: Cell membrane; Multi-pass membrane protein. Note=Plasma membrane of spermatids.
TISSUE SPECIFICITY: Abundantly expressed in testis.
DEVELOPMENTAL STAGE: Expressed at late stages of spermatogenesis, from late to maturing spermatids.
DOMAIN: Aquaporins contain two tandem repeats each containing three membrane-spanning domains and a pore-forming loop with the signature motif Asn-Pro/Ala-Ala/Ser (NPA).
SIMILARITY: Belongs to the MIP/aquaporin (TC 1.A.8) family

Source of Antigen and Antibodies

Antigen	18-aa peptide of Rat AQP7 (Gene Accession #P56403 ; **Designated (AQP71-P or control peptide) conjugated to KLH; epitope location** ~ N-terminal, Cytoplasmic domain
Ab Host/type	Rabbit, polyclonal, Unpurified antiserum (cat # AQP71-S) Aff pure IgG1 (**cat #AQP71-A**) purified over antigen-agarose column
2-ab	**Goat Anti-rabbit IgG-HRP** cat # 20320 (AP, biotin, FITC conjugates also available)
-ve control	**# 20011-1, Goat (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 Chemiluminescence technique. see refs 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: see published refs 2.

Specificity & Cross-reactivity

Rat AQP71-P peptide has 81% homology with the mouse AQP7. It has no significant sequence homology with human AQP7 or AQP7-like or AQP7-adipose. 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 (1997) JBC 272, 20782.

Citations of ADI's antibodies for AQP7 (see updates at the web site)

DaSilva N, 2005 Biol Reprod, in press, WB IF
Liu Z, 2002, PNAS 99, 6053-6058 WB, yeast cells

This product is for In vitro research use only.

AQP71-S-A-P 70910A

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