ALPHA DIAGNOSTIC INTERNATIONAL

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Product Specification Sheet

Aquaporin 0 (AQP0/MIP26) Antibodies

Cat # AQP01-P	Human AQP0 Control/blocking peptide	**SIZE**: 100 ug
Cat # AQP01-S	**Rabbit** Anti-Human AQP0 antiserum # 1	**SIZE**: 100 ul
Cat # AQP01-A	**Rabbit** Anti-Human AQP0 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, AQP1-15) have been cloned, expressed, and their distribution studied in many tissues. 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.

AQP0 or MIP26 (major intrinsic protein 26 kDa), and Aquaporin-1 (**AQP1**, purified from red cells) also called **CHIP-28** (channel forming integral protein, 28 kDa; 268 AA; gene locus 7p14) has been the foundation of the growing family of aquaporin. The lens specific AQP0 represents ~80% of total lens membrane protein.

FUNCTION: Water channel. May be responsible for regulating the osmolarity of the lens.
SUBCELLULAR LOCATION:; Multi-pass membrane protein.
TISSUE SPECIFICITY: Major protien of lens fiber gap junctions.
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).
DISEASE: Defects in MIP are a cause of autosomal recessive congenital cataract [MIM:154050].
SIMILARITY: Belongs to the MIP/aquaporin (TC 1.A.8)
Protein name Lens fiber major intrinsic protein
Synonyms Aquaporin-0, MIP26, MP26, AQP0
Gene name : MIP

Antigen	17-aa peptide of Human AQP0 (protein accession #P30301, refs 1); **Designated (AQP01-P or control peptide) conjugated to KLH; epitope location** ~ C-terminal, Cytoplasmic
Ab Host/type	Rabbit, polyclonal Unpurified antiserum (cat # AQP01-S) Aff pure IgG (**cat #AQP01-A**
2-ab	**Goat Anti-Rabbit IgG-HRP** cat # 60320 (AP, biotin, FITC conjugates also available)
-ve control IgG	Cat # 20010-1, Rabbit (non-immune) Serum 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

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: see refs 2. we recommend the use of affinity purified antibody at 2-10 µg/ml (2).

Specificity & Cross-reactivity

The 17 AA hAQP01-P peptide has significant homology with bovine (94%), rat/mouse (88%), and frog (70%) AQP0. Antibody cross-reactivity in various species is not known. The 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) Pisano MM (1991) Genomics 11, 981-990; Kent NA (1990) Nucl. Acid Res. 18, 4256; Shiels A (1996) Nature Genet. 12, 212

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

Kenney MC, 2004, J. Histochem. Cytochem., 52: 1341., IHC
Grey AC, 2003, Exp. Eye Res. 77, 567-574, WB, IHC
Shiels A, 2003, Nature Genetics 12, 212-215, ,
Okamura T, 2003, Genomics, 81, 361-368, , IF
Golestaneh N, 2004, J. Biol. Chem., 279: 31813 - 31822, WB,,
Hubert C, 2002, J. Biol. Chem 277: 22710-22717, WB, IHC/IF

*This product is for in vitro research use only.

Related material available from ADI
AQP01-S-A-P 90515A

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