

Product Specification Sheet

**Aquaporin 3 (/AQP3/GLIP) Antibodies**

<b>Cat # AQP31-P</b>	Rat AQP3 Control/blocking peptide	<b>SIZE:</b> 100 ug
<b>Cat # AQP31-S</b>	Rabbit Anti-rat AQP3 antiserum # 1	<b>SIZE:</b> 100 ul
<b>Cat # AQP31-A</b>	Rabbit Anti-rat AQP3 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 "aquaporins". Over the last decade, genes for several members of aquaporin family (AQP0-AQP14, and AQPAP) have been cloned, expressed, and their distribution studied in many tissues. **AQP3** (GLIP, Glycerol-transporting integral protein; 285 AA) has a wide tissue distribution. 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 water-specific channel that provide kidney medullary collecting duct with high permeability to water, thereby permitting water to move in the direction of an osmotic gradient. May function as a water and urea exit mechanism in antidiuresis in collecting duct cells. Also slightly permeable to urea and glycerol. It may play an important role in gastrointestinal tract water transport and in glycerol metabolism.

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

**TISSUE SPECIFICITY:** Renal medulla and colon. Predominantly in the inner medulla.

**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 [view classification].

Protein name Aquaporin-3

Synonyms AQP-3, 31.4 kDa water channel protein

Gene name Aqp3

**Source of Antigen and Antibodies**

<b>Antigen</b>	15aa peptide of Rat AQP3 (Gene accession #P47862 ; Designated (AQP31-P or control peptide). conjugated to KLH, ~ C-terminal. Cytoplasmic domain
<b>Ab Host/type</b>	Rabbit, polyclonal Unpurified antiserum (cat # AQP31-S) Aff pure IgG1 (cat # <b>AQP31-A</b> ) purified over antigen-agarose column
<b>2-ab</b>	<b>Goat Anti-rabbit IgG-HRP</b> cat # 20320 (AP, biotin, FITC conjugates also available)
<b>-ve control</b>	<b># 20011-1, Goat (non-immune) IgG, purified, suitable for ELISA, Western, IHC as -ve control</b>

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

**Specificity & Cross-reactivity**

The 15 AA rat AQP31 peptide has 85% homology with human, ovine, 92% with mouse AQP3. Antibody crossreactivity 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 (see detailed protocol at: [www.4adi.com/data/abblock.html](http://www.4adi.com/data/abblock.html)).

**General References :** . Ishibashi K (1994) Proc Natl Acad Sci, 91, 6269-6273; Echevarria M (1994) Proc Natl Acad Sci, 91, 10997-1100; Ma, TA (1994) J Biol. Chem. 269, 21845-21849; 2. Ecelbarger, CA (1995) Am. J. Physiol. 269, F663-F672.

**Citations of ADI's AQP3 antibodies** (see updates at the web site)

de Baey A, 2000, J. Exp. Med. 191: 743-748, WB  
Beroukas D, 2002, Lab. Invest. 82:1547-1552, , IF,  
Barcroft LC, 2003, Developmental Biol. 256, 342-354, WB,, IHC,  
Laforenza U, 2005, J. Nutr., Oct 2005; 135: 2329 - 2336, WB, IF,  
Tamai K, 2006, Hepatol. Res. In press, WB, IHC, 4% PF,  
Amlal H, 2003, Kidney Intl. 64, 2, 544-554, WB,, ,  
Liu Z, 2004, BBRC, 316, 1178-1185, WB,, , yeast expression  
Wang W, 2003, Calcified T Intl. 72(3):222-7, WB, ,

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

**Related material available from ADI**

AQP31-S-A-P

70910A

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