

**CHICKEN ANTI-AQUAPORIN-8  
AFFINITY PURIFIED  
POLYCLONAL ANTIBODY**

**CATALOG NUMBER:** AB3078

**LOT NUMBER:**

**QUANTITY:** 50 µg

**CONCENTRATION:** 1 mg/mL

**SPECIFICITY:** Aquaporin 8 (AQP8). The peptide is unique to Aquaporin 8 without significant homology to any other Aquaporins.

**BACKGROUND:** 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 have been cloned, expressed, and their distribution studied in many tissues. Aquaporin-0 or MIP26 (major intrinsic protein 26 kDa), and Aquaporin-1 (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 aquaporins. The lens specific Aquaporin-0 represents up to 80% of total lens membrane protein. Defects in MIP26 are a cause of autosomal dominant cataract. The cataract Fraser mutation (CAT-FR or Shriveled) is a transposon-induced splicing error that substitutes a long terminal repeat sequence for the c-terminus of MIP. The lens opacity mutation (LOP) is an AA substitution that inhibits targeting of MIP to the cell membrane.

A new water channel, Aquaporin-8, has been identified in rat pancreas and testis by homology cloning (1). Aquaporin-8 (263 aa; 28 kDa) is also found in liver, colon and salivary glands. Aquaporin-8 (APQ8) 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: g-TIP (plant water channel, 37%); AQP2 and MIP (37%), AQP1, AQP4, and AQP5 (30-34%); AQP3 (26%). AQP8 does not facilitate glycerol transport.

**IMMUNOGEN:** A 16 amino acid synthetic peptide within the C-terminal domain of rat Aquaporin-8 (1) was selected for antibody production. This domain is predicted to be cytoplasmic.

**APPLICATIONS:** Western blot: 1-10 µg/mL using ECL  
Immunohistochemistry: We recommend using the affinity purified antibody at 2-10 µg/mL on paraformaldehyde fixed sections of tissues.  
ELISA: 0.5-1.0 µg/mL when tested against 1 µg/mL of immunogen peptide.  
Optimal working dilutions must be determined by end user.

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- SPECIES REACTIVITIES:** Rat. Species cross reactivity has not been determined. The immunogen peptide has 93% homology with the mouse and 81% with human AQP8.
- FORMAT:** Affinity purified immunoglobulin.
- PRESENTATION:** Liquid in PBS with 0.1% BSA and 0.05% sodium azide.
- STORAGE/HANDLING:** Maintain frozen at -20°C in undiluted aliquots for up to 6 months after date of receipt. Avoid repeated freeze/thaw cycles.
- RELATED REFERENCES:**
1. Koyama, Yu et al (1997) *JBC* 272, 30329; Ishibashi K et al (1997) *BBRC* 714, 714-718.

**Important Note:** *During shipment, small volumes of product will occasionally become entrapped in the seal of the product vial. For products with volumes of 200  $\mu$ L or less, we recommend gently tapping the vial on a hard surface or briefly centrifuging the vial in a tabletop centrifuge to dislodge any liquid in the container's cap.*

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