

# AQP0 (T-16): sc-49364

## BACKGROUND

Aquaporins (AQPs) are a large family of integral membrane channel proteins that facilitate the transport of water through the cell membrane. Aquaporins are widely distributed and are involved in renal water absorption, generation of pulmonary secretions, lacrimation and the secretion and reabsorption of cerebrospinal fluid and aqueous humor. AQP0 is the most abundant endogenous protein in the plasma membrane of lens fiber cells where it functions not only as a water pore, but it is also involved in fiber-fiber adhesion and is crucial for fiber cell structure and organization. AQP0 contains an additional pore constriction, not seen in any other aquaporin structures, which may be responsible for pore gating. The closed AQP0 pore holds just three water molecules, which are spaced too far apart to form hydrogen bonds with each other. The C-terminal domain of AQP0 undergoes extensive post-translational modification, including many truncations, during lens aging due to the actions of m-Calpain, proteases or non-enzymatic mechanisms. These truncation sites may be involved in the development of cataracts.

## REFERENCES

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- Ball, L.E., et al. 2003. Water permeability of C-terminally truncated aquaporin 0 (AQP0 1-243) observed in the aging human lens. *Invest. Ophthalmol. Vis. Sci.* 44: 4820-4828.
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- Gonen, T., et al. 2005. Lipid-protein interactions in double-layered two-dimensional AQP0 crystals. *Nature* 438: 633-638.
- Hashido, M., et al. 2005. Comparative simulations of aquaporin family: AQP1, AQP2, AQP0 and GlpF. *FEBS Lett.* 579: 5549-5552.
- Han, B.G., et al. 2006. Water transport in AQP0 aquaporin: molecular dynamics studies. *J. Mol. Biol.* 360: 285-296.
- Kalman, K., et al. 2006. AQP0-LTR of the Cat(Fr) mouse alters water of wildtype AQP0. *Biochim. Biophys. Acta* 1758: 1094-1099.

## CHROMOSOMAL LOCATION

Genetic locus: MIP (human) mapping to 12q13.3; Mip (mouse) mapping to 10 D3.

## SOURCE

AQP0 (T-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an extracellular domain of AQP0 of human origin.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-49364 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

AQP0 (T-16) is recommended for detection of AQP0 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

AQP0 (T-16) is also recommended for detection of AQP0 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for AQP0 siRNA (h): sc-42361, AQP0 siRNA (m): sc-42362, AQP0 shRNA Plasmid (h): sc-42361-SH, AQP0 shRNA Plasmid (m): sc-42362-SH, AQP0 shRNA (h) Lentiviral Particles: sc-42361-V and AQP0 shRNA (m) Lentiviral Particles: sc-42362-V.

Molecular Weight of AQP0: 28 kDa.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## SELECT PRODUCT CITATIONS

- Korlimbinis, A., et al. 2009. Protein aging: truncation of aquaporin 0 in human lens regions is a continuous age-dependent process. *Exp. Eye Res.* 88: 966-973.

## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.



Try **AQP0 (B-11): sc-376445**, our highly recommended monoclonal alternative to AQP0 (T-16).