

BACKGROUND

Aquaporins (AQPs) are a large family of integral membrane water transport channel proteins that facilitate the transport of water through the cell membrane. This function is conserved in animals, plants and bacteria. Many isoforms of Aquaporin have been identified in mammals, designated AQP0 through AQP10. Aquaporins are widely distributed and it is not uncommon for more than one type of AQP to be present in the same cell. Although most Aquaporins are only permeable to water, AQP3, AQP7, AQP9 and one of the two AQP10 transcripts are also permeable to urea and glycerol. AQP2 is the only water channel that is activated by vasopressin to enhance water reabsorption in the kidney collecting duct. Aquaporins are involved in renal water absorption, generation of pulmonary secretions, lacrimation and the secretion and reabsorption of cerebrospinal fluid and aqueous humor. AQP1 is an integral membrane protein expressed in erythrocytes and renal tubule cells.

REFERENCES

- Denker, B.M., et al. 1988. Identification, purification, and partial characterization of a novel M_r 28,000 integral membrane protein from erythrocytes and renal tubules. *J. Biol. Chem.* 263: 15634-15642.
- Preston, G.M., et al. 1991. Isolation of the cDNA for erythrocyte integral membrane protein of 28 kDa: member of an ancient channel family. *Proc. Natl. Acad. Sci. USA* 88: 11110-11114.
- Moon, C., et al. 1993. The human Aquaporin-CHIP gene: structure, organization, and chromosomal localization. *J. Biol. Chem.* 268: 15772-15778.

CHROMOSOMAL LOCATION

Genetic locus: AQP1 (human) mapping to 7p14.3; Aqp1 (mouse) mapping to 6 B3.

SOURCE

AQP1 (B-11) is a mouse monoclonal antibody raised against amino acids 215-269 of AQP1 of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

AQP1 (B-11) is available conjugated to agarose (sc-25287 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-25287 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-25287 PE), fluorescein (sc-25287 FITC), Alexa Fluor[®] 488 (sc-25287 AF488), Alexa Fluor[®] 546 (sc-25287 AF546), Alexa Fluor[®] 594 (sc-25287 AF594) or Alexa Fluor[®] 647 (sc-25287 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-25287 AF680) or Alexa Fluor[®] 790 (sc-25287 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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STORAGE

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

APPLICATIONS

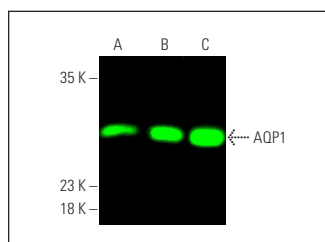
AQP1 (B-11) is recommended for detection of AQP1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:500), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for AQP1 siRNA (h): sc-29711, AQP1 siRNA (m): sc-29712, AQP1 siRNA (r): sc-156108, AQP1 shRNA Plasmid (h): sc-29711-SH, AQP1 shRNA Plasmid (m): sc-29712-SH, AQP1 shRNA Plasmid (r): sc-156108-SH, AQP1 shRNA (h) Lentiviral Particles: sc-29711-V, AQP1 shRNA (m) Lentiviral Particles: sc-29712-V and AQP1 shRNA (r) Lentiviral Particles: sc-156108-V.

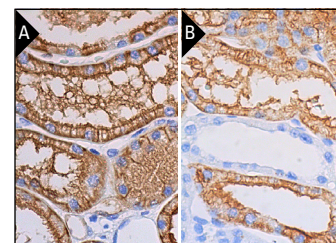
Molecular Weight of AQP1: 28 kDa.

Molecular Weight of glycosylated AQP1: 35-45 kDa.

Positive Controls: mouse lung extract: sc-2390, mouse kidney extract: sc-2255 or human kidney extract: sc-363764.

DATA

AQP1 (B-11): sc-25287. Near-infrared western blot analysis of AQP1 expression in mouse lung (A), mouse kidney (B) and human kidney (C) tissue extracts. Blocked with UltraCruz[®] Blocking Reagent: sc-516214. Detection reagent used: m-IgGk BP-CFL 680: sc-516180.



AQP1 (B-11): sc-25287. Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing membrane and cytoplasmic staining of cells in tubules (A). AQP1 (B-11) HRP: sc-25287 HRP. Direct immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing membrane and cytoplasmic staining of cells in tubules. Blocked with 0.25X UltraCruz[®] Blocking Reagent: sc-516214 (B).

SELECT PRODUCT CITATIONS

- Tanaka, H., et al. 2004. Expression and function of Ets-1 during experimental acute renal failure in rats. *J. Am. Soc. Nephrol.* 15: 3083-3092.
- Coulter, M.E., et al. 2018. The ESCRT-III protein CHMP1A mediates secretion of Sonic hedgehog on a distinctive subtype of extracellular vesicles. *Cell Rep.* 24: 973-986.
- Angelico, G., et al. 2018. Aquaporin-1 expression in fluoro-edenite-induced mesothelioma effusions: an approach by cell-block procedure. *Cytopathology* 29: 455-460.

RESEARCH USE

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