SANTA CRUZ BIOTECHNOLOGY, INC.

AQP1 (1/22): sc-32737

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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.

REFERENCE

1. 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.
2. Preston, G.M., et al. 1991. Isolation of the cDNA for erythrocyte integral membrane protein of 28 kilodaltons: member of an ancient channel family. Proc. Natl. Acad. Sci. USA 88: 11110-11114.
3. 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 (1/22) is a mouse monoclonal antibody raised against amino acids 249-269 of intracellular AQP1 of rat origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

AQP1 (1/22) is available conjugated to agarose (sc-32737 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-32737 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-32737 PE), fluorescein (sc-32737 FITC), Alexa Fluor® 488 (sc-32737 AF488), Alexa Fluor® 546 (sc-32737 AF546), Alexa Fluor® 594 (sc-32737 AF594) or Alexa Fluor® 647 (sc-32737 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-32737 AF680) or Alexa Fluor® 790 (sc-32737 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

AQP1 (1/22) is recommended for detection of AQP1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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 flow cytometry (1 µg per 1 x 10^6 cells).

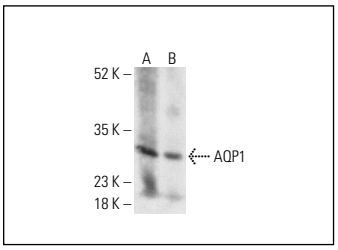
Suitable for use as control antibody for AQP1 siRNA (h): sc-29711, AQP1 siRNA (m): sc-29712, AQP1 siRNA (r): sc-156108, AQP1 shRNA Plasmid (h): sc-29711-SH, AQP1 shRNA Plasmid (m): sc-29712-SH, AQP1 shRNA Plasmid (r): sc-156108-SH, AQP1 shRNA (h) Lentiviral Particles: sc-29711-V, AQP1 shRNA (m) Lentiviral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

Molecular Weight of AQP1: 28 kDa.

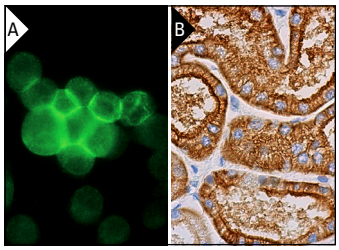
Molecular Weight of glycosylated AQP1: 35-45 kDa.

Positive Controls: mouse kidney extract: sc-2255, rat kidney extract: sc-2394 or KNRK whole cell lysate: sc-2214.

DATA



AQP1 (1/22) HRP: sc-32737 HRP. Direct western blot analysis of AQP1 expression in mouse kidney (**A**) and rat kidney (**B**) tissue extracts.



AQP1 (1/22): sc-32737. Immunofluorescence staining of methanol-fixed KNRK cells showing membrane localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing membrane and cytoplasmic staining of cells in tubules (**B**).

SELECT PRODUCT CITATIONS

1. Satoh, J., et al. 2007. Human astrocytes express aquaporin-1 and aquaporin-4 *in vitro* and *in vivo*. Neuropathology 27: 245-256.
2. Xu, H., et al. 2021. Choroid plexus NKCC1 mediates cerebrospinal fluid clearance during mouse early postnatal development. Nat. Commun. 12: 447.
3. Parigoris, E., et al. 2022. Extended longevity geometrically-inverted proximal tubule organoids. Biomaterials 290: 121828.
4. Bihlmaier, R., et al. 2023. Aquaporin-1 and aquaporin-4 expression in ependyma, choroid plexus and surrounding transition zones in the human brain. Biomolecules 13: 212.

RESEARCH USE

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