SANTA CRUZ BIOTECHNOLOGY, INC.

AQP2 (N-20): sc-9880

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.

REFERENCES

1. 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.
2. Sasaki, S., et al. 1993. Cloning, expression and chromosomal mapping of human collecting duct water channel (hWCH-CD). J. Am. Soc. Nephrol. 4: 858.

SOURCE

AQP2 (N-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of AQP2 of human origin.

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-9880 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

AQP2 (N-20) is recommended for detection of AQP0, AQP1, AQP2, AQP4, AQP5 and AQP6 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); not recommended for detection of other Aquaporin family members.

AQP2 (N-20) is also recommended for detection of AQP0, AQP1, AQP2, AQP4, AQP5 and AQP6 in additional species, including equine, canine, bovine and porcine.

Molecular Weight of unglycosylated AQP2: 29 kDa.

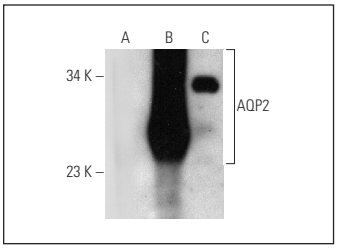
Molecular Weight of mature AQP2: 35-45 kDa.

Positive Controls: AQP2 (m): 293T Lysate: sc-118503, KNRK whole cell lysate: sc-2214 or Caki-1 cell lysate: sc-2224.

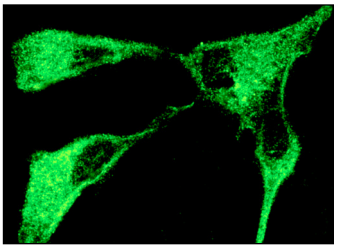
STORAGE

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

DATA



AQP2 (N-20): sc-9880. Western blot analysis of AQP2 expression in non-transfected 293T: sc-117752 (**A**), mouse AQP2 transfected 293T: sc-118503 (**B**) and KNRK (**C**) whole cell lysates.



AQP2 (N-20): sc-9880. Immunofluorescence staining of methanol-fixed Caki-1 cells showing membrane localization.

SELECT PRODUCT CITATIONS

1. Parkkila, S., et al. 2000. Expression of the membrane-associated carbonic anhydrase isozyme XII in the human kidney and renal tumors. J. Histochem. Cytochem. 48: 1601-1608.
2. Leduc-Nadeau, A., et al. 2007. Elaboration of a novel technique for purification of plasma membranes from *Xenopus laevis* oocytes. Am. J. Physiol., Cell Physiol. 292: C1132-C1136.
3. Hoffert, J.D., et al. 2008. Vasopressin-stimulated increase in phosphorylation at Ser269 potentiates plasma membrane retention of aquaporin-2. J. Biol. Chem. 283: 24617-24627.
4. Yu, M.J., et al. 2009. Systems-level analysis of cell-specific AQP2 gene expression in renal collecting duct. Proc. Natl. Acad. Sci. USA 106: 2441-2446.
5. Purkerson, J.M., et al. 2010. Adaptation to metabolic acidosis and its recovery are associated with changes in anion exchanger distribution and expression in the cortical collecting duct. Kidney Int. 78: 993-1005.
6. Nedvetsky, P.I., et al. 2010. Reciprocal regulation of aquaporin-2 abundance and degradation by protein kinase A and p38-MAP kinase. J. Am. Soc. Nephrol. 21: 1645-1656.
7. Maekawa, C., et al. 2010. Expression and translocation of aquaporin-2 in the endolymphatic sac in patients with Meniere's disease. J. Neuroendocrinol. 22: 1157-1164.

RESEARCH USE

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