# SANTA CRUZ BIOTECHNOLOGY, INC.

# AQP4 (C-19): sc-9888



## BACKGROUND

In skeletal muscle, AQP4 (aquaporin 4 also known as mercurial insensitive water channel), localizes to the sarcolemma of fast-twitch muscle fibers. 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.

### CHROMOSOMAL LOCATION

Genetic locus: AQP4 (human) mapping to 18q11.2; Aqp4 (mouse) mapping to 18 A1.

#### SOURCE

AQP4 (C-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of AQP4 of human origin.

#### PRODUCT

Each vial contains 100  $\mu g$  IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-9888 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## **APPLICATIONS**

AQP4 (C-19) is recommended for detection of AQP4 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

AQP4 (C-19) is also recommended for detection of AQP4 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for AQP4 siRNA (h): sc-29715, AQP4 siRNA (m): sc-29716, AQP4 shRNA Plasmid (h): sc-29715-SH, AQP4 shRNA Plasmid (m): sc-29716-SH, AQP4 shRNA (h) Lentiviral Particles: sc-29715-V and AQP4 shRNA (m) Lentiviral Particles: sc-29716-V.

Molecular Weight of AQP4: 34 kDa.

Positive Controls: mouse kidney extract: sc-2255 or rat kidney extract: sc-2394.

## STORAGE

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

## DATA





AQP4 (C-19): sc-9888. Western blot analysis of AQP4 expression in rat kidney ( $\bf{A}$ ) and mouse kidney ( $\bf{B}$ ) tissue extracts.

AQP4 (C-19): sc-9888. Immunoperoxidase staining of formalin fixed, paraffin-embedded human lung tissue showing membrane staining of pneumocytes and macrophages.

#### SELECT PRODUCT CITATIONS

- Miyajima, M., et al. 2004. Effect of C-type natriuretic peptide (CNP) on water channel aquaporin 4 (AQP4) expression in cultured astrocytes. Brain Res. Mol. Brain Res. 122: 109-115.
- Davide Basco, D., et al. 2011. Absence of aquaporin-4 in skeletal muscle alters proteins involved in bioenergetic pathways and calcium handling. PLoS ONE 6: e19225.
- Procino, G., et al. 2011. Altered expression of renal aquaporins and α-adducin polymorphisms may contribute to the establishment of saltsensitive hypertension. Am. J. Hypertens. 24: 822-888.
- 4. Haj-Yasein, N.N., et al. 2011. Evidence that compromised K<sup>+</sup> spatial buffering contributes to the epileptogenic effect of mutations in the human Kir4.1 gene (KCNJ10). Glia 59: 1635-1642.
- Pisani, F., et al. 2011. Translational regulation mechanisms of aquaporin-4 supramolecular organization in astrocytes. Glia 59: 1923-1932.
- Thrane, A.S., et al. 2011. Critical role of aquaporin-4 (AQP4) in astrocytic Ca<sup>2+</sup> signaling events elicited by cerebral edema. Proc. Natl. Acad. Sci. USA 108: 846-851.
- Wang, D. and Owler, B.K. 2011. Expression of AQP1 and AQP4 in paediatric brain tumours. J. Clin. Neurosci. 18: 122-127.

#### **RESEARCH USE**

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

MONOS Satisfation Guaranteed Try AQP4 (4/18): sc-32739 or AQP4 (B-5): sc-390488, our highly recommended monoclonal aternatives to AQP4 (C-19). Also, for AC, HRP, FITC, PE, Alexa Fluor<sup>®</sup> 488 and Alexa Fluor<sup>®</sup> 647 conjugates, see AQP4 (4/18): sc-32739.