SANTA CRUZ BIOTECHNOLOGY, INC.

AQP5 (D-7): sc-514022

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. In the lung, AQP5 is responsible for the majority of water transport across the apical membrane of type I alveolar epithelial cells.

CHROMOSOMAL LOCATION

Genetic locus: AQP5 (human) mapping to 12q13.12; Aqp5 (mouse) mapping to 15 F1.

SOURCE

AQP5 (D-7) is a mouse monoclonal antibody raised against amino acids 66-265 mapping at the C-terminus of AQP5 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

AQP5 (D-7) is available conjugated to agarose (sc-514022 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-514022 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-514022 PE), fluorescein (sc-514022 FITC), Alexa Fluor® 488 (sc-514022 AF488), Alexa Fluor® 546 (sc-514022 AF546), Alexa Fluor® 594 (sc-514022 AF594) or Alexa Fluor® 647 (sc-514022 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-514022 AF680) or Alexa Fluor® 790 (sc-514022 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

AQP5 (D-7) is recommended for detection of AQP5 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

Suitable for use as control antibody for AQP5 siRNA (h): sc-29717, AQP5 siRNA (m): sc-29718, AQP5 shRNA Plasmid (h): sc-29717-SH, AQP5 shRNA Plasmid (m): sc-29718-SH, AQP5 shRNA (h) Lentiviral Particles: sc-29717-V and AQP5 shRNA (m) Lentiviral Particles: sc-29718-V.

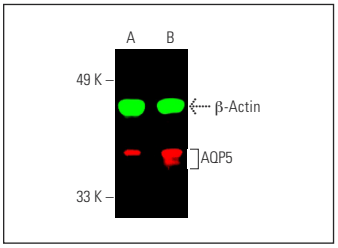
Molecular Weight of AQP5: 35 kDa.

Positive Controls: COLO 320DM cell lysate: sc-2226.

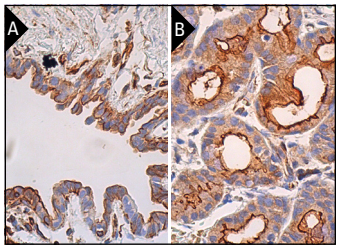
STORAGE

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

DATA



Simultaneous direct near-infrared western blot analysis of AQP5 expression, detected with AQP5 (D-7) Alexa Fluor® 790: sc-514022 AF790 and β-Actin expression, detected with β-Actin (C4) Alexa Fluor® 680: sc-47778 AF680 in Caco-2 (**A**) and COLO 320DM (**B**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214.



AQP5 (D-7): sc-514022. Immunoperoxidase staining of formalin fixed, paraffin-embedded human bronchus tissue showing membrane and cytoplasmic staining of respiratory epithelial cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human salivary gland tissue showing apical membrane and cytoplasmic staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Suzuki, D., et al. 2017. Inhibition of TGF-β signaling supports high proliferative potential of diverse p63+ mouse epithelial progenitor cells *in vitro*. Sci. Rep. 7: 6089.
2. Kim, H.K., et al. 2018. Asymmetric expression level of clock genes in left vs. right nasal mucosa in humans with and without allergies and in rats: circadian characteristics and possible contribution to nasal cycle. PLoS ONE 13: e0194018.
3. Ramli, N.S.K., et al. 2019. Hormonal control of vas deferens fluid volume and aquaporin expression in rats. J. Mol. Histol. 50: 21-34.
4. Praktiknjo, S.D., et al. 2020. Tracing tumorigenesis in a solid tumor model at single-cell resolution. Nat. Commun. 11: 991.
5. Hou, J., et al. 2021. Co-delivery of siPTPN13 and siNOX4 via (myo)fibroblast-targeting polymeric micelles for idiopathic pulmonary fibrosis therapy. Theranostics 11: 3244-3261.
6. Xia, L., et al. 2022. AdMSC-derived exosomes alleviate acute lung injury via transferring mitochondrial component to improve homeostasis of alveolar macrophages. Theranostics 12: 2928-2947.
7. Ciccimarra, R., et al. 2022. The normal and fibrotic mouse lung classified by spatial proteomic analysis. Sci. Rep. 12: 8742.
8. Yoon, Y.J., et al. 2022. Salivary gland organoid culture maintains distinct glandular properties of murine and human major salivary glands. Nat. Commun. 13: 3291.

RESEARCH USE

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