SANTA CRUZ BIOTECHNOLOGY, INC.

AQP7 (D-12): sc-376407

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. Aquaporins are involved in renal water absorption, generation of pulmonary secretions, lacrimation, and the secretion and reabsorption of cerebrospinal fluid and aqueous humor. Human AQP7 is a 342 amino acid protein that facilitates water, glycerol and urea transport, and is predominately expressed in adipose tissue.

CHROMOSOMAL LOCATION

Genetic locus: AQP7 (human) mapping to 9p13.3; Aqp7 (mouse) mapping to 4 A5.

SOURCE

AQP7 (D-12) is a mouse monoclonal antibody raised against amino acids 169-269 mapping at the C-terminus of AQP7 of rat origin.

PRODUCT

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

AQP7 (D-12) is available conjugated to agarose (sc-376407 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-376407 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376407 PE), fluorescein (sc-376407 FITC), Alexa Fluor® 488 (sc-376407 AF488), Alexa Fluor® 546 (sc-376407 AF546), Alexa Fluor® 594 (sc-376407 AF594) or Alexa Fluor® 647 (sc-376407 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376407 AF680) or Alexa Fluor® 790 (sc-376407 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

AQP7 (D-12) is recommended for detection of AQP7 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for AQP7 siRNA (h): sc-42367, AQP7 siRNA (m): sc-42368, AQP7 shRNA Plasmid (h): sc-42367-SH, AQP7 shRNA Plasmid (m): sc-42368-SH, AQP7 shRNA (h) Lentiviral Particles: sc-42367-V and AQP7 shRNA (m) Lentiviral Particles: sc-42368-V.

Molecular Weight (predicted) of AQP7: 37 kDa.

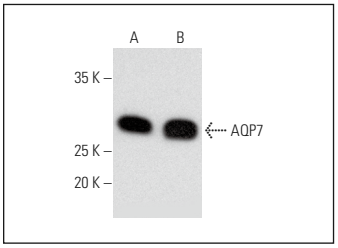
Molecular Weight (observed) of AQP7: 23-33 kDa.

Positive Controls: rat testis extract: sc-2400, Hep G2 cell lysate: sc-2227 or MCF10A whole cell lysate.

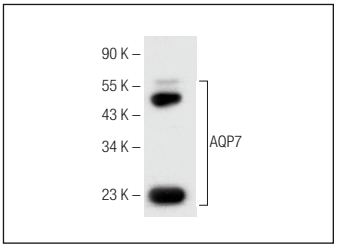
STORAGE

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

DATA



AQP7 (D-12): sc-376407. Western blot analysis of AQP7 expression in Hep G2 (**A**) and MCF10A (**B**) whole cell lysates.



AQP7 (D-12): sc-376407. Western blot analysis of AQP7 expression in rat testis tissue extract.

SELECT PRODUCT CITATIONS

1. Avola, R., et al. 2018. Blue light induces down-regulation of aquaporin 1, 3, and 9 in human keratinocytes. Cells 7: 197.
2. 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.
3. Taguchi, K., et al. 2020. Role of small proliferative adipocytes: possible beige cell progenitors. J. Endocrinol. 245: 65-78.
4. Mossoba, M.E., et al. 2021. Evaluation of transporter expression in HK-2 cells after exposure to free and ester-bound 3-MCPD. Toxicol. Rep. 8: 436-442.
5. He, X., et al. 2021. Metformin inhibits MAPK signaling and rescues pancreatic Aquaporin 7 expression to induce Insulin secretion in type 2 diabetes mellitus. J. Biol. Chem. 297: 101002.
6. Verta, R., et al. 2021. The interplay between histamine H4 receptor and the kidney function: the lesson from H4 receptor knockout mice. Biomolecules 11: 1517.
7. Plaza, A., et al. 2022. Cholecystokinin promotes functional expression of the aquaglycerol channel aquaporin 7 in adipocytes. Br. J. Pharmacol. 179: 4092-4106.
8. Lin, C., et al. 2023. Osmotic pressure induces translocation of aquaporin-8 by P38 and JNK MAPK signaling pathways in patients with functional constipation. Dig. Liver Dis. 55: 1049-1059.
9. Ribeiro, J.C., et al. 2023. Aquaporin-7-mediated glycerol permeability is linked to human sperm motility in asthenozoospermia and during sperm capacitation. Cells 12: 2003.
10. Barile, B., et al. 2023. AQP4-independent TRPV4 modulation of plasma membrane water permeability. Front. Cell. Neurosci. 17: 1247761.

RESEARCH USE

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