SANTA CRUZ BIOTECHNOLOGY, INC.

AQP11 siRNA (h): sc-96600

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. AQP11 (aquaporin-11), also known as AQPX1, is a 271 amino acid multi-pass membrane protein that belongs to the MIP/aquaporin family and the AQP11/AQP12 subfamily. Encoded by a gene that maps to human chromosome 11q14.1, AQP11 contains three exons and is highly expressed in testis, moderately in thymus, kidney, liver and intestine, and marginally in brain and lung. Similar to other aquaporin family members, AQP11 consists of two tandem repeats, each containing three membrane-spanning domains. However, AQP11 contains one pore-forming loop with an asparagine-proline-alanine (NPA) signature motif distinct from other aquaporins, which typically have two, suggesting that AQP11 is comprised of a different pore structure and performs a unique function. Disruption of AQP11 may be linked to polycystic kidneys, primary proximal tubule defects, hepatic cysts and renal failure.

REFERENCES

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2. Morishita, Y., et al. 2005. Disruption of aquaporin-11 produces polycystic kidneys following vacuolization of the proximal tubule. Mol. Cell. Biol. 25: 7770-7779.
3. Gorelick, D.A., et al. 2006. Aquaporin-11: a channel protein lacking apparent transport function expressed in brain. BMC Biochem. 7: 14.
4. Ishibashi, K. 2006. Aquaporin subfamily with unusual NPA boxes. Biochim. Biophys. Acta 1758: 989-993.
5. Yakata, K., et al. 2007. Aquaporin-11 containing a divergent NPA motif has normal water channel activity. Biochim. Biophys. Acta 1768: 688-693.
6. Pérez, E., et al. 2007. Aquaporin expression in the cerebral cortex is increased at early stages of Alzheimer disease. Brain Res. 1128: 164-174.
7. Frigeri, A., et al. 2007. Aquaporins as targets for drug discovery. Curr. Pharm. Des. 13: 2421-2427.

CHROMOSOMAL LOCATION

Genetic locus: AQP11 (human) mapping to 11q14.1.

PRODUCT

AQP11 siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see AQP11 shRNA Plasmid (h): sc-96600-SH and AQP11 shRNA (h) Lentiviral Particles: sc-96600-V as alternate gene silencing products.

For independent verification of AQP11 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-96600A, sc-96600B and sc-96600C.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

AQP11 siRNA (h) is recommended for the inhibition of AQP11 expression in human cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor AQP11 gene expression knockdown using RT-PCR Primer: AQP11 (h)-PR: sc-96600-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.