SANTA CRUZ BIOTECHNOLOGY, INC.

AQP10 siRNA (h): sc-61986

BACKGROUND

AQP10 (Aquaporin 10) is expressed in human duodenum and jejunum. 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. AQP10 has two isoforms and they differ in the presence of a 475 nucleotide insertion that causes a translational frame shift. The result is the existence of a short and long form of AQP10, each with a distinct carboxy terminus. The shorter isoform (translated with the insertion) localizes to the capillary endothelium in villi of the small intestine. The longer isoform (translated without the insertion) localizes to GEP (gastro-entero-pancrestic) endocrine cells. Although most aquaporins are only permeable to water, AQP3, AQP7, AQP9 and the longer AQP10 transcript, are also permeable to urea and glycerol.

REFERENCES

1. Hatakeyama, S., et al. 2001. Cloning of a new aquaporin (AQP10) abundantly expressed in duodenum and jejunum. Biochem. Biophys. Res. Commun. 287: 814-819.
2. Morinaga, T., et al. 2002. Mouse Aquaporin 10 gene (AQP10) is a pseudogene. Biochem. Biophys. Res. Commun. 294: 630-634.
3. Ishibashi, K., et al. 2002. Cloning and identification of a new member of water channel (AQP10) as an aquaglyceroporin. Biochim. Biophys. Acta 1576: 335-340.
4. Wang, W., et al. 2003. Aquaporin expression in developing human teeth and selected orofacial tissues. Calcif. Tissue Int. 72: 222-227.
5. Mobasheri, A., et al. 2004. Immunohistochemical localization of Aquaporin 10 in the apical membranes of the human ileum: a potential pathway for luminal water and small solute absorption. Histochem. Cell Biol. 121: 463-471.

CHROMOSOMAL LOCATION

Genetic locus: AQP10 (human) mapping to 1q21.3.

PRODUCT

AQP10 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 AQP10 shRNA Plasmid (h): sc-61986-SH and AQP10 shRNA (h) Lentiviral Particles: sc-61986-V as alternate gene silencing products.

For independent verification of AQP10 (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-61986A, sc-61986B and sc-61986C.

PROTOCOLS

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

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

AQP10 siRNA (h) is recommended for the inhibition of AQP 10 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 AQP 10 gene expression knockdown using RT-PCR Primer: AQP10 (h)-PR: sc-61986-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.