SANTA CRUZ BIOTECHNOLOGY, INC.

AQP7 siRNA (m): sc-42368

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 AQP-0 through AQP-10. 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, AQP-3, AQP-7, AQP-9 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.

REFERENCES

1. Ma, T., et al. 1996. cDNA cloning and gene structure of a novel water channel expressed exclusively in human kidney: evidence for a gene cluster of aquaporins at chromosome locus 12q13. Genomics 35: 543-550.
2. Kuriyama, H., et al. 1997. Molecular cloning and expression of a novel human aquaporin from adipose tissue with glycerol permeability. Biochem. Biophys. Res. Commun. 241: 53-58.
3. Echevarria, M., et al. 1998. Aquaporins. J. Physiol. Biochem. 54: 107-118.
4. Ishibashi, K., et al. 1998. Molecular characterization of human Aquaporin-7 gene and its chromosomal mapping. Biochim. Biophys. Acta 1399: 62-66.
5. Beitz, E., et al. 1999. The mammalian aquaporin water channel family: a promising new drug target. Curr. Med. Chem. 6: 457-467.
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CHROMOSOMAL LOCATION

Genetic locus: Aqp7 (mouse) mapping to 4 A5.

PRODUCT

AQP7 siRNA (m) 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 AQP7 shRNA Plasmid (m): sc-42368-SH and AQP7 shRNA (m) Lentiviral Particles: sc-42368-V as alternate gene silencing products.

For independent verification of AQP7 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-42368A, sc-42368B and sc-42368C.

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

AQP7 siRNA (m) is recommended for the inhibition of AQP7 expression in mouse 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.

GENE EXPRESSION MONITORING

AQP7 (D-12): sc-376407 is recommended as a control antibody for monitoring of AQP7 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor AQP7 gene expression knockdown using RT-PCR Primer: AQP7 (m)-PR: sc-42368-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.