SANTA CRUZ BIOTECHNOLOGY, INC.

AQP1 siRNA (m): sc-29712

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. AQP1 is an integral membrane protein expressed in erythrocytes and renal tubule cells.

REFERENCES

1. Denker, B.M., et al. 1988. Identification, purification, and partial characterization of a novel M_r 28,000 integral membrane protein from erythrocytes and renal tubules. J. Biol. Chem. 263: 15634-15642.
2. Preston, G.M., et al. 1991. Isolation of the cDNA for erythrocyte integral membrane protein of 28 kDa: member of an ancient channel family. Proc. Natl. Acad. Sci. USA 88: 11110-11114.
3. Moon, C., et al. 1993. The human Aquaporin-CHIP gene: structure, organization, and chromosomal localization. J. Biol. Chem. 268: 15772-15778.
4. Deen, P.M., et al. 1994. Requirement of human renal water channel Aquaporin-2 for vasopressin-dependent concentration of urine. Science 264: 92-95.
5. Ishibashi, K., et al. 1995. Structure and chromosomal localization of a human water channel (AQP3) gene. Genomics 27: 352-354.

CHROMOSOMAL LOCATION

Genetic locus: Aqp1 (mouse) mapping to 6 B3.

PRODUCT

AQP1 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 AQP1 shRNA Plasmid (m): sc-29712-SH and AQP1 shRNA (m) Lentiviral Particles: sc-29712-V as alternate gene silencing products.

For independent verification of AQP1 (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-29712A, sc-29712B and sc-29712C.

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

AQP1 siRNA (h) is recommended for the inhibition of AQP1 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.

GENE EXPRESSION MONITORING

AQP1 (B-11): sc-25287 is recommended as a control antibody for monitoring of AQP1 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 AQP1 gene expression knockdown using RT-PCR Primer: AQP1 (m)-PR: sc-29712-PR (20 µl, 520 bp). 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.