SANTA CRUZ BIOTECHNOLOGY, INC.

SLC4A8 siRNA (h): sc-95907

BACKGROUND

SLC4A8 (solute carrier family 4, sodium bicarbonate cotransporter, member 8), also known as NBC3, kNBC3 or NDCBE (Na^+-driven chloride bicarbonate exchanger), is a member of the anion exchanger family and is predominantly expressed in brain and spinal column with moderate expression in thyroid, kidney and trachea. In the brain, SLC4A8 is found at high levels in the pyramidal cells of the hippocampus and the Purkinje cells of the cerebellum. Localizing to the membrane, SLC4A8 is an N-glycosylated, multi-pass membrane protein that plays an important role in intracellular pH regulation in neurons. More specifically, SLC4A8 functions as an electroneutral transporter and mediates the transport of bicarbonate and sodium ions across the membrane from the blood to the cell in exchange for cellular chloride. SLC4A8 is most closely related to NCBE and SLC4A7. Due to alternative splicing events, seven isoforms exist for SLC4A8.

REFERENCES

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3. Soleimani, M. and Burnham, C.E. 2000. Physiologic and molecular aspects of the Na^+:HCO_3^- cotransporter in health and disease processes. Kidney Int. 57: 371-384.
4. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 605024. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Aalkjaer, C., et al. 2004. Sodium coupled bicarbonate transporters in the kidney, an update. Acta Physiol. Scand. 181: 505-512.
6. Damkier, H.H., et al. 2007. Molecular expression of SLC4-derived Na^+-dependent anion transporters in selected human tissues. Am. J. Physiol. Regul. Integr. Comp. Physiol. 293: R2136-R2146.
7. Piermarini, P.M., et al. 2007. Evidence against a direct interaction between intracellular carbonic anhydrase II and pure C-terminal domains of SLC4 bicarbonate transporters. J. Biol. Chem. 282: 1409-1421.

CHROMOSOMAL LOCATION

Genetic locus: SLC4A8 (human) mapping to 12q13.13.

PRODUCT

SLC4A8 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 SLC4A8 shRNA Plasmid (h): sc-95907-SH and SLC4A8 shRNA (h) Lentiviral Particles: sc-95907-V as alternate gene silencing products.

For independent verification of SLC4A8 (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-95907A, sc-95907B and sc-95907C.

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

SLC4A8 siRNA (h) is recommended for the inhibition of SLC4A8 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

SLC4A8 (LX-2): sc-100672 is recommended as a control antibody for monitoring of SLC4A8 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 SLC4A8 gene expression knockdown using RT-PCR Primer: SLC4A8 (h)-PR: sc-95907-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.