SANTA CRUZ BIOTECHNOLOGY, INC.

NCBE siRNA (h): sc-94898

BACKGROUND

NCBE, also known as SLC4A10 (solute carrier family 4, sodium bicarbonate transporter, member 10), is a 1,118 amino acid multi-pass membrane protein that localizes to the basolateral membrane and belongs to a large family of anion exchange proteins. Existing as multiple alternatively spliced isoforms, NCBE functions as an electrogenic sodium-dependent chloride/bicarbonate cotransporter that plays an important role in the regulation of intracellular pH. The gene encoding NCBE maps to human chromosome 2, which houses over 1,400 genes and comprises nearly 8% of the human genome. Harlequin icthyosis, a rare and morbid skin deformity, is associated with mutations in the chromosome 2-localized ABCA12 gene, while the lipid metabolic disorder sitosterolemia is associated with defects in the ABCG5 and ABCG8 genes, which also map to chromosome 2.

REFERENCES

1. Yano, H., et al. 2000. Assignment of the human solute carrier family 4, sodium bicarbonate cotransporter-like, member 10 gene (SLC4A10) to 2q23→q24 by *in situ* hybridization and radiation hybrid mapping. Cytogenet. Cell Genet. 89: 276-277.
2. Wang, C.Z., et al. 2000. The Na^+-driven Cl^-/HCO_3^- exchanger. Cloning, tissue distribution, and functional characterization. J. Biol. Chem. 275: 35486-35490.
3. 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.
4. Gurnett, C.A., et al. 2008. Disruption of sodium bicarbonate transporter SLC4A10 in a patient with complex partial epilepsy and mental retardation. Arch. Neurol. 65: 550-553.
5. Parker, M.D., et al. 2008. Characterization of human SLC4A10 as an electroneutral Na/HCO_3 cotransporter (NBCn2) with Cl^- self-exchange activity. J. Biol. Chem. 283: 12777-12788.
6. Chen, L.M., et al. 2008. Use of a new polyclonal antibody to study the distribution and glycosylation of the sodium-coupled bicarbonate transporter NCBE in rodent brain. Neuroscience 151: 374-385.

CHROMOSOMAL LOCATION

Genetic locus: SLC4A10 (human) mapping to 2q24.2.

PRODUCT

NCBE 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 NCBE shRNA Plasmid (h): sc-94898-SH and NCBE shRNA (h) Lentiviral Particles: sc-94898-V as alternate gene silencing products.

For independent verification of NCBE (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-94898A, sc-94898B and sc-94898C.

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

NCBE siRNA (h) is recommended for the inhibition of NCBE 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 NCBE gene expression knockdown using RT-PCR Primer: NCBE (h)-PR: sc-94898-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.