

SLC13A5 siRNA (h): sc-94127

BACKGROUND

SLC13A5 (solute carrier family 13 (sodium-dependent citrate transporter), member 5), also known as NaCT, is a 568 amino acid multi-pass membrane protein that belongs to the SLC13A transporter family and is expressed in liver, brain and testicular tissue. Functioning as a high-affinity sodium/citrate co-transporter, SLC13A5 mediates the electrogenic import of citrate into cells and is thought to facilitate the circulation of citrate for the generation of metabolic energy, as well as the synthesis of cholesterol and fatty acids. The gene encoding SLC13A5 maps to human chromosome 17, which comprises over 2.5% of the human genome and encodes over 1,200 genes. Two key tumor suppressor genes are associated with chromosome 17, namely, p53 and BRCA1. Tumor suppressor p53 is necessary for maintenance of cellular genetic integrity by moderating cell fate through DNA repair versus cell death. Malfunction or loss of p53 expression is associated with malignant cell growth and Li-Fraumeni syndrome. Like p53, BRCA1 is directly involved in DNA repair, though specifically it is recognized as a genetic determinant of early onset breast cancer and predisposition to cancers of the ovary, colon, prostate gland and fallopian tubes.

REFERENCES

1. Pajor, A.M. 1999. Citrate transport by the kidney and intestine. *Semin. Nephrol.* 19: 195-200.
2. Inoue, K., et al. 2002. Human Na⁺-coupled citrate transporter: primary structure, genomic organization, and transport function. *Biochem. Biophys. Res. Commun.* 299: 465-471.
3. Inoue, K., et al. 2002. Structure, function, and expression pattern of a novel sodium-coupled citrate transporter (NaCT) cloned from mammalian brain. *J. Biol. Chem.* 277: 39469-39476.
4. Inoue, K., et al. 2003. Human sodium-coupled citrate transporter, the orthologue of *Drosophila* Indy, as a novel target for lithium action. *Biochem. J.* 374: 21-26.
5. Markovich, D. and Murer, H. 2004. The SLC13 gene family of sodium sulphate/carboxylate cotransporters. *Pflugers Arch.* 447: 594-602.

CHROMOSOMAL LOCATION

Genetic locus: SLC13A5 (human) mapping to 17p13.1.

PRODUCT

SLC13A5 siRNA (h) is a pool of 2 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see SLC13A5 shRNA Plasmid (h): sc-94127-SH and SLC13A5 shRNA (h) Lentiviral Particles: sc-94127-V as alternate gene silencing products.

For independent verification of SLC13A5 (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-94127A and sc-94127B.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

SLC13A5 siRNA (h) is recommended for the inhibition of SLC13A5 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 μ M in 66 μ l. 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

SLC13A5 (2G4): sc-293277 is recommended as a control antibody for monitoring of SLC13A5 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 SLC13A5 gene expression knockdown using RT-PCR Primer: SLC13A5 (h)-PR: sc-94127-PR (20 μ l, 579 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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