

SGLT-6 siRNA (h): sc-93032

BACKGROUND

SGLT-6, also known as SLC5A11 (solute carrier family 5 (sodium/glucose co-transporter), member 11) KST1, SLGTX or SMIT2, is a 675 amino acid multi-pass membrane protein that belongs to the sodium/solute symporter family of transport proteins. Expressed at high levels in kidney, heart, placenta, liver and skeletal muscle, SGLT-6 is involved in the co-transport of Myo-inositol with sodium, specifically facilitating the transport of two Myo-inositols per sodium ion. In addition to its role in sodium transport, SGLT-6 also participates in the transport of glucose and xylose and may function to induce Pcd-1-dependent cell apoptosis. The gene encoding SGLT-6 is an autoimmune modifier in systemic lupus erythematosus (SLE), suggesting an involvement for SGLT-6 in the pathogenesis of SLE. Multiple isoforms of SGLT-6 exist due to alternative splicing events.

REFERENCES

1. Roll, P., Massacrier, A., Pereira, S., Robaglia-Schlupp, A., Cau, P. and Szepietowski, P. 2002. New human sodium/glucose co-transporter gene (KST1): identification, characterization, and mutation analysis in ICCA (infantile convulsions and choreoathetosis) and BFIC (benign familial infantile convulsions) families. *Gene* 285: 141-148.
2. Coady, M.J., Wallendorff, B., Gagnon, D.G. and Lapointe, J.Y. 2002. Identification of a novel Na⁺/Myo-inositol co-transporter. *J. Biol. Chem.* 277: 35219-35224.
3. Groenen, P.M., Klootwijk, R., Schijvenaars, M.M., Straatman, H., Mariman, E.C., Franke, B. and Steegers-Theunissen, R.P. 2004. Spina bifida and genetic factors related to Myo-inositol, glucose, and zinc. *Mol. Genet. Metab.* 82: 154-161.
4. Online Mendelian Inheritance in Man, OMIM[™]. 2006. Johns Hopkins University, Baltimore, MD. MIM Number: 610238. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
5. Yang, Y., Chung, E.K., Wu, Y.L., Savelli, S.L., Nagaraja, H.N., Zhou, B., Hebert, M., Jones, K.N., Shu, Y., Kitzmiller, K., Blanchong, C.A., McBride, K.L., Higgins, G.C., et al. 2007. Gene copy-number variation and associated polymorphisms of complement component C4 in human systemic lupus erythematosus (SLE): low copy number is a risk factor for and high copy number is a protective factor against SLE susceptibility in European Americans. *Am. J. Hum. Genet.* 80: 1037-1054.
6. Tsai, L.J., Hsiao, S.H., Tsai, L.M., Lin, C.Y., Tsai, J.J., Liou, D.M. and Lan, J.L. 2008. The sodium-dependent glucose co-transporter SLC5A11 as an autoimmune modifier gene in SLE. *Tissue Antigens* 71: 114-126.
7. Gao, H., Wu, G., Spencer, T.E., Johnson, G.A. and Bazer, F.W. 2009. Select nutrients in the ovine uterine lumen. ii. glucose transporters in the uterus and peri-implantation conceptuses. *Biol. Reprod.* 80: 94-104.

CHROMOSOMAL LOCATION

Genetic locus: SLC5A11 (human) mapping to 16p12.1.

PROTOCOLS

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

PRODUCT

SGLT-6 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see SGLT-6 shRNA Plasmid (h): sc-93032-SH and SGLT-6 shRNA (h) Lentiviral Particles: sc-93032-V as alternate gene silencing products.

For independent verification of SGLT-6 (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-93032A, sc-93032B and sc-93032C.

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

SGLT-6 siRNA (h) is recommended for the inhibition of SGLT-6 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor SGLT-6 gene expression knockdown using RT-PCR Primer: SGLT-6 (h)-PR: sc-93032-PR (20 μ l). 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.