SANTA CRUZ BIOTECHNOLOGY, INC.

Glut8 siRNA (m): sc-35498

BACKGROUND

Glucose is the major source of our energy and there are numerous isoforms of the glucose transporter in mammals, including Glut1, Glut2, Glut3, Glut4, Glut5, Glut6, Glut7, Glut8 and Glut9. The Glut5 gene located on the short arm of human chromosome 1 encodes a 501-amino acid facilitative glucose transporter. Glut5 mRNA is highly expressed in small intestine and to a lesser extent in kidney, skeletal muscle and adipose tissue. Glut5 plays a critical role in fructose absorption in the small intestine and its expression is highly induced when exposed to a fructose-enriched diet. Glut5 transporter expressed in human skeletal muscle is specifically localized to the plasma membrane, where it participates in regulating hexose transfer across the sarcolemma. Glut8, a novel glucose transporter-like protein, exhibits significant sequence similarity with the other members of sugar transporter family. Glut8 comprises 12 putative membrane-spanning helices and several conserved motifs, which are important for transport activity. In human tissues, Glut8 is predominantly expressed in testis and, to a lesser extent, in most other tissues including skeletal muscle, heart, small intestine and brain. In addition, the Glut8 glucose transport facilitator has a hormonally regulated testicular function.

REFERENCES

1. Kayano, T., et al. 1990. Human facilitative glucose transporters. Isolation, functional characterization and gene localization of cDNAs encoding an isoform (Glut5) expressed in small intestine, kidney, muscle and adipose tissue and an unusual glucose transporter pseudogene-like sequence. J. Biol. Chem. 265: 13276-13282.
2. Hundal, H.S., et al. 1992. Biochemical and immunocytochemical localization of the "Glut5 glucose transporter" in human skeletal muscle. Biochem. J. 286: 339-343.
3. Inukai, K., et al. 1993. Cloning and increased expression with fructose feeding of rat jejunal Glut5. Endocrinology 133: 2009-2014.
4. Rand, E.B., et al. 1993. Sequence, tissue distribution, and functional characterization of the rat fructose transporter Glut5. Am. J. Physiol. 264: G1169-G1176.
5. Darakhshan, F., et al. 1998. Biochemical and functional characterization of the Glut5 fructose transporter in rat skeletal muscle. Biochem. J. 336: 361-366.

CHROMOSOMAL LOCATION

Genetic locus: Slc2a8 (mouse) mapping to 2 B.

PRODUCT

Glut8 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 Glut8 shRNA Plasmid (m): sc-35498-SH and Glut8 shRNA (m) Lentiviral Particles: sc-35498-V as alternate gene silencing products.

For independent verification of Glut8 (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-35498A, sc-35498B and sc-35498C.

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

Glut8 siRNA (m) is recommended for the inhibition of Glut8 expression in mouse 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 Glut8 gene expression knockdown using RT-PCR Primer: Glut8 (m)-PR: sc-35498-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.