SANTA CRUZ BIOTECHNOLOGY, INC.

Glut12 siRNA (m): sc-145449

BACKGROUND

Glucose serves as the major energy substrate of mammalian cells and is fundamental to metabolism. Glucose passage across cell membranes is mediated by a family of transporters termed glucose transporters, or Gluts, which are characterized by the presence of 12 membrane-spanning helices. The Glut family is divided into three subfamilies: class I (previously known as glucose transporters), which includes Glut1, Glut2, Glut3 and Glut4; class II (previously known as fructose transporters), which includes Glut5, Glut7, Glut9 and Glut11; and class III, which includes Glut6, Glut8, Glut10, Glut12 and the myo-inositol transporter HMIT1. Glut12 (glucose transporter type 12), also known as SLC2A12 (solute carrier family 2, facilitated glucose transporter member 12) or Glut8, is a 617 amino acid multi-pass membrane protein and facilitative glucose transporter expressed in heart, prostate and skeletal muscle.

REFERENCES

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2. Rogers, S., et al. 2002. Identification of a novel glucose transporter-like protein-Glut12. Am. J. Physiol. Endocrinol. Metab. 282: E733-E738.
3. Wood, I.S., et al. 2003. Expression of Class III facilitative glucose transporter genes (Glut10 and Glut12) in mouse and human adipose tissues. Biochem. Biophys. Res. Commun. 308: 43-49.
4. Rogers, S., et al. 2003. Glucose transporter Glut12-functional characterization in *Xenopus laevis* oocytes. Biochem. Biophys. Res. Commun. 308: 422-426.
5. Stuart, C.A., et al. 2006. Hexose transporter mRNAs for Glut4, Glut5, and Glut12 predominate in human muscle. Am. J. Physiol. Endocrinol. Metab. 291: E1067-E1073.
6. Linden, K.C., et al. 2006. Renal expression and localization of the facilitative glucose transporters Glut1 and Glut12 in animal models of hypertension and diabetic nephropathy. Am. J. Physiol. Renal Physiol. 290: F205-F213.
7. Vieira, A.R., et al. 2008. Candidate gene/loci studies in cleft lip/palate and dental anomalies finds novel susceptibility genes for clefts. Genet. Med. 10: 668-674.
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CHROMOSOMAL LOCATION

Genetic locus: Slc2a12 (mouse) mapping to 10 A3.

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.

PRODUCT

Glut12 siRNA (m) 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Glut12 shRNA Plasmid (m): sc-145449-SH and Glut12 shRNA (m) Lentiviral Particles: sc-145449-V as alternate gene silencing products.

For independent verification of Glut12 (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-145449A and sc-145449B.

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

Glut12 siRNA (m) is recommended for the inhibition of Glut12 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 Glut12 gene expression knockdown using RT-PCR Primer: Glut12 (m)-PR: sc-145449-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.