

Glut10 siRNA (m): sc-60698

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. Glut10 is a 541 amino acid facilitative glucose transporter expressed in high amounts in liver and pancreas. It contains 12 transmembrane domains, with a hydrophilic intracellular loop between helices 6 and 7, and a potential N-linked glycosylation site, with a large extracellular loop between helices 9 and 10. The gene for Glut 10, SLC2A10, maps to chromosome 20q13.12, a region that is linked to type 2 diabetes.

REFERENCES

- Shikhman, A., et al. 2001. Cytokine regulation of facilitated glucose transport in human articular chondrocytes. *J. Immunol.* 167: 7001-7008.
- Joost, H. and Thorens, B. 2001. The extended Glut-family of sugar/polyol transport facilitators: nomenclature, sequence characteristics and function of its novel members. *Mol. Membr. Biol.* 18: 247-256.
- McVie-Wylie, et al. 2001. Molecular cloning of a novel member of the Glut family of transporters, SLC2A10 (Glut10), localized on chromosome 20q13.1: a candidate gene for NIDDM susceptibility. *Genomics* 72: 113-117.
- Dawson, P.A., et al. 2001. Sequence and functional analysis of Glut10: a glucose transporter in the type 2 diabetes-linked region of chromosome 20q12-13.1. *Mol. Genet. Metab.* 74: 186-199.
- Andersen, G., et al. 2003. Genetic variation of the Glut10 glucose transporter (SLC2A10) and relationships to type 2 diabetes and intermediary traits. *Diabetes* 52: 2445-2448.

CHROMOSOMAL LOCATION

Genetic locus: SLC2A10 (mouse) mapping to 2 H3.

PRODUCT

Glut10 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Glut10 shRNA Plasmid (m): sc-60698-SH and Glut10 shRNA (m) Lentiviral Particles: sc-60698-V as alternate gene silencing products.

For independent verification of Glut10 (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-60698A, sc-60698B and sc-60698C.

PROTOCOLS

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

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

Glut10 siRNA (m) is recommended for the inhibition of Glut10 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 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

Glut10 (H-10): sc-398495 is recommended as a control antibody for monitoring of Glut10 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 Glut10 gene expression knockdown using RT-PCR Primer: Glut10 (m)-PR: sc-60698-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.