

SLC35C1 siRNA (m): sc-153534

BACKGROUND

SLC35C1 (solute carrier family 35, member C1), also known as FUCT1 (GDP-fucose transporter 1), is a multi-pass membrane protein that belongs to the SLC35C subfamily of the Nucleotide-Sugar Transporter (NST) family. Members of the NST family are transmembrane proteins that mediate the translocation of nucleotide-sugars from the cytosol to the interior lumen of the endoplasmic reticulum (ER) and the golgi apparatus via an antiport mechanism, exchanging nucleoside monophosphates for nucleotide-sugars. This activity of NSTs is important for providing an available source of nucleotide-sugars for glycoconjugate synthesis. Localizing to the golgi apparatus membrane, SLC35C1 participates in the transport of GDP-fucose from the cytoplasm into the Golgi lumen. Mutations in the gene encoding SLC35C1 are associated with CDG2C (congenital disorder of glycosylation type 2C), also known as LAD2 (leukocyte adhesion deficiency type II). CDG2C is characterized by the lack of fucosylated glycoproteins and symptoms include short stature, mental retardation, elevated peripheral leukocytes and facial stigmata.

REFERENCES

1. Lühn, K., et al. 2001. The gene defective in leukocyte adhesion deficiency II encodes a putative GDP-fucose transporter. *Nat. Genet.* 28: 69-72.
2. Lübke, T., et al. 2001. Complementation cloning identifies CDG-IIc, a new type of congenital disorders of glycosylation, as a GDP-fucose transporter deficiency. *Nat. Genet.* 28: 73-76.
3. Etzioni, A., et al. 2002. Leukocyte adhesion deficiency (LAD) type II/carbohydrate deficient glycoprotein (CDG) IIc founder effect and genotype/phenotype correlation. *Am. J. Med. Genet.* 110: 131-135.
4. Online Mendelian Inheritance in Man, OMIM[™]. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 605881. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
5. Hidalgo, A., et al. 2003. Insights into leukocyte adhesion deficiency type 2 from a novel mutation in the GDP-fucose transporter gene. *Blood* 101: 1705-1712.
6. Ishida, N. and Kawakita, M. 2004. Molecular physiology and pathology of the nucleotide sugar transporter family (SLC35). *Pflugers Arch.* 447: 768-775.
7. Ishikawa, H.O., et al. 2005. Notch deficiency implicated in the pathogenesis of congenital disorder of glycosylation IIc. *Proc. Natl. Acad. Sci. USA* 102: 18532-18537.
8. Helmus, Y., et al. 2006. Leukocyte adhesion deficiency II patients with a dual defect of the GDP-fucose transporter. *Blood* 107: 3959-3966.
9. Moriawaki, K., et al. 2007. A high expression of GDP-fucose transporter in hepatocellular carcinoma is a key factor for increases in fucosylation. *Glycobiology* 17: 1311-1320.

CHROMOSOMAL LOCATION

Genetic locus: Slc35c1 (mouse) mapping to 2 E1.
extension temperature should be 68-72° C.

RESEARCH USE

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

PRODUCT

SLC35C1 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 SLC35C1 shRNA Plasmid (m): sc-153534-SH and SLC35C1 shRNA (m) Lentiviral Particles: sc-153534-V as alternate gene silencing products.

For independent verification of SLC35C1 (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-153534A, sc-153534B and sc-153534C.

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

SLC35C1 siRNA (m) is recommended for the inhibition of SLC35C1 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor SLC35C1 gene expression knockdown using RT-PCR Primer: SLC35C1 (m)-PR: sc-153534-PR (20 μ l). 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.