

ZnT-10 siRNA (m): sc-155818

BACKGROUND

Zinc, an essential element required for cell proliferation and differentiation, plays a role in a diverse array of cellular functions (such as neuroregulation) and acts as a cofactor for numerous enzymes and transcription factors. The zinc transporter (ZnT) family regulates the supply of zinc within cells, and its members commonly contain six membrane-spanning domains, a large histidine-rich intracellular loop and a C-terminal tail. ZnT-10 (zinc transporter 10), also known as ZNT8, ZRC1, ZNT10 or SLC30A10, is a 496 amino acid multi-pass membrane protein belonging to the cation diffusion facilitator (CDF) transporter family. Specifically expressed in fetal liver and fetal brain, ZnT-10 may be involved in the efflux of zinc from the cell. Existing as three isoforms produced by alternative splicing events, ZnT-10 enhances glucose-stimulated Insulin secretion.

REFERENCES

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2. Liuzzi, J.P., et al. 2004. Responsive transporter genes within the murine intestinal-pancreatic axis form a basis of zinc homeostasis. *Proc. Natl. Acad. Sci. USA* 101: 14355-14360.
3. Devirgiliis, C., et al. 2007. Zinc fluxes and zinc transporter genes in chronic diseases. *Mutat. Res.* 622: 84-93.
4. Egefjord, L., et al. 2009. Zinc transporter gene expression is regulated by pro-inflammatory cytokines: a potential role for zinc transporters in β -cell apoptosis? *BMC Endocr. Disord.* 9: 7.
5. Wenzlau, J.M., et al. 2009. Novel antigens in type 1 diabetes: the importance of ZnT8. *Curr. Diab. Rep.* 9: 105-112.
6. Nicolson, T.J., et al. 2009. Insulin storage and glucose homeostasis in mice null for the granule zinc transporter ZnT8 and studies of the type 2 diabetes-associated variants. *Diabetes* 58: 2070-2083.
7. Lemaire, K., et al. 2009. Insulin crystallization depends on zinc transporter ZnT8 expression, but is not required for normal glucose homeostasis in mice. *Proc. Natl. Acad. Sci. USA* 106: 14872-14877.

CHROMOSOMAL LOCATION

Genetic locus: Slc30a10 (mouse) mapping to 1 H5.

PRODUCT

ZnT-10 siRNA (m) is a target-specific 19-25 nt siRNA 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 ZnT-10 shRNA Plasmid (m): sc-155818-SH and ZnT-10 shRNA (m) Lentiviral Particles: sc-155818-V as alternate gene silencing products.

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

ZnT-10 siRNA (m) is recommended for the inhibition of ZnT-10 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 ZnT-10 gene expression knockdown using RT-PCR Primer: ZnT-10 (m)-PR: sc-155818-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.