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ZnT-1 siRNA (m): sc-155817

BACKGROUND

Zinc, an essential element required for cell proliferation and differentiation, plays a role in a diverse array of cellular functions, including acting as a cofactor for numerous enzymes and transcription factors and as a neuroregulator. The zinc transporter (ZnT) family regulates the supply of zinc within cells, and its members are characterized by containing six membrane-spanning domains, a large histidine-rich intracellular loop, and a C-terminal tail. ZnT-1, a ubiquitous protein, localizes to the plasma membrane to aid in the export of zinc out of cells.

REFERENCES

1. Palmiter, R.D., et al. 1995. Cloning and functional characterization of a mammalian zinc transporter that confers resistance to zinc. *EMBO J.* 14: 639-649.
2. McMahon, R.J., et al. 1998. Mammalian zinc transporters. *J. Nutr.* 128: 667-70.
3. Cousins, R.J., et al. 2000. Integrative aspects of zinc transporters. *J. Nutr.* 130: 1384S-1387S.
4. Beyersmann, D., et al. 2001. Functions of zinc in signaling, proliferation and differentiation of mammalian cells. *Biometals* 14: 331-341.
5. Liuzzi, J.P., et al. 2001. Differential regulation of zinc transporter 1, 2, and 4 mRNA expression by dietary zinc in rats. *J. Nutr.* 131: 46-52.
6. Sekler, I., et al. 2002. Distribution of the zinc transporter ZnT-1 in comparison with chelatable zinc in the mouse brain. *J. Comp. Neurol.* 447: 201-209.
7. Cousins, R.J., et al. 2003. Regulation of zinc metabolism and genomic outcomes. *J. Nutr.* 133: 1521S-1526S.

CHROMOSOMAL LOCATION

Genetic locus: Slc30a1 (mouse) mapping to 1 H6.

PRODUCT

ZnT-1 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see ZnT-1 shRNA Plasmid (m): sc-155817-SH and ZnT-1 shRNA (m) Lentiviral Particles: sc-155817-V as alternate gene silencing products.

For independent verification of ZnT-1 (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-155817A and sc-155817B.

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.

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-1 siRNA (m) is recommended for the inhibition of ZnT-1 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-1 gene expression knockdown using RT-PCR Primer: ZnT-1 (m)-PR: sc-155817-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.