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ZnT-7 siRNA (m): sc-155822

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-7 (zinc transporter 7), also known as SLC30A7 (solute carrier family 30 member 7), is a 376 amino acid protein that localizes to the membrane of the *trans*-Golgi network. Expressed as a homooligomer, ZnT-7 is believed to facilitate zinc transport from the cytoplasm into the Golgi apparatus and is required with ZNT-5 for the activation of zinc-requiring alkaline phosphatases. ZnT-7 is upregulated in response to zinc depletion.

REFERENCES

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3. Kirschke, C.P., et al. 2008. Expression of the ZnT (SLC30) family members in the epithelium of the mouse prostate during sexual maturation. *J. Mol. Histol.* 39: 359-370.
4. Chi, Z.H., et al. 2009. ZnT-7 and Zn²⁺ are present in different cell populations in the mouse testis. *Histol. Histopathol.* 24: 25-30.
5. Gao, H.L., et al. 2009. Golgi apparatus localization of ZnT-7 in the mouse cerebellum. *Histol. Histopathol.* 24: 567-572.
6. Fukunaka, A., et al. 2009. Demonstration and characterization of the heterodimerization of ZnT-5 and ZnT-6 in the early secretory pathway. *J. Biol. Chem.* 284: 30798-30806.
7. Jou, M.Y., et al. 2009. Tissue-specific alterations in zinc transporter expression in intestine and liver reflect a threshold for homeostatic compensation during dietary zinc deficiency in weanling rats. *J. Nutr.* 139: 835-841.

CHROMOSOMAL LOCATION

Genetic locus: Slc30a7 (mouse) mapping to 3 G1.

PRODUCT

ZnT-7 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 ZnT-7 shRNA Plasmid (m): sc-155822-SH and ZnT-7 shRNA (m) Lentiviral Particles: sc-155822-V as alternate gene silencing products.

For independent verification of ZnT-7 (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-155822A, sc-155822B and sc-155822C.

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-7 siRNA (m) is recommended for the inhibition of ZnT-7 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-7 gene expression knockdown using RT-PCR Primer: ZnT-7 (m)-PR: sc-155822-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.

PROTOCOLS

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