SANTA CRUZ BIOTECHNOLOGY, INC.

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

1. Helston, R.M., et al. 2007. Zinc transporters in the mouse placenta show a coordinated regulatory response to changes in dietary zinc intake. Placenta 28: 437-444.
2. Gao, H.L., et al. 2008. Expression of zinc transporter ZnT-7 in mouse superior cervical ganglion. Auton. Neurosci. 140: 59-65.
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 Zn^{2+} 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 µM 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 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM 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 µM in 66 µl. 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 µl). 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.