

## ZnT-4 siRNA (h): sc-106719

### 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. Like ZnT-1, ZnT-4 displays ubiquitous expression with high expression in mammary gland and brain. ZnT-4 may also participate in "lethal milk" syndrome, where breast milk contains lowered levels of zinc.

### 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: 667-670.
3. Beyersmann, D., et al. 2001. Functions of zinc in signaling, proliferation and differentiation of mammalian cells. *Biometals* 14: 331-341.
4. Luzzi, 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.
5. 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.
6. Michalczyk, A.A., et al. 2002. Constitutive expression of hZnT4 zinc transporter in human breast epithelial cells. *Biochem. J.* 364: 105-113.

### CHROMOSOMAL LOCATION

Genetic locus: SLC30A4 (human) mapping to 15q21.1.

### PRODUCT

ZnT-4 siRNA (h) 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see ZnT-4 shRNA Plasmid (h): sc-106719-SH and ZnT-4 shRNA (h) Lentiviral Particles: sc-106719-V as alternate gene silencing products.

For independent verification of ZnT-4 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-106719A, sc-106719B and sc-106719C.

### 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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

### APPLICATIONS

ZnT-4 siRNA (h) is recommended for the inhibition of ZnT-4 expression in human 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  $\mu$ M in 66  $\mu$ 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-4 gene expression knockdown using RT-PCR Primer: ZnT-4 (h)-PR: sc-106719-PR (20  $\mu$ l, 579 bp). 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](http://www.scbt.com) for detailed protocols and support products.