

ZIP7 siRNA (m): sc-76963

BACKGROUND

Zinc is an essential cofactor that is involved in cell growth and development, as well as in protein, nucleic acid and lipid metabolism. The transport of zinc across the cell membrane is crucial for correct enzyme and overall cell function. ZIP7, also known as SLC39A7 (solute carrier family 39 (zinc transporter), member 7), KE4, HKE4, RING5 or H2-KE4, is a 469 amino acid multi-pass membrane protein that belongs to the ZIP transporter family. Expressed at high levels in kidney, placenta, pancreas and lung, ZIP7 functions as a zinc transporter that facilitates the movement of zinc, both from the extracellular environment and from intracellular storage compartments, to the cytosol. The gene encoding ZIP7 maps to human chromosome 6, which contains 170 million base pairs and comprises nearly 6% of the human genome.

REFERENCES

1. Aziz, N., et al. 1993. Down-regulation of Ke 6, a novel gene encoded within the major histocompatibility complex, in murine polycystic kidney disease. *Mol. Cell. Biol.* 13: 1847-1853.
2. Aziz, N., et al. 1994. Coordinate regulation of 11 β -HSD and Ke 6 genes in cpk mouse: implications for steroid metabolic defect in PKD. *Am. J. Physiol.* 267: F791-F797.
3. Ando, A., et al. 1996. cDNA cloning of the human homologues of the mouse Ke4 and Ke6 genes at the centromeric end of the human MHC region. *Genomics* 35: 600-602.
4. Kikuti, Y.Y., et al. 1997. Physical mapping 220 kb centromeric of the human MHC and DNA sequence analysis of the 43-kb segment including the RING1, HKE6, and HKE4 genes. *Genomics* 42: 422-435.
5. Taylor, K.M., et al. 2004. Structure-function analysis of HKE4, a member of the new LIV-1 subfamily of zinc transporters. *Biochem. J.* 377: 131-139.
6. Huang, L., et al. 2005. The ZIP7 gene (Slc39a7) encodes a zinc transporter involved in zinc homeostasis of the Golgi apparatus. *J. Biol. Chem.* 280: 15456-15463.

CHROMOSOMAL LOCATION

Genetic locus: Slc39a7 (mouse) mapping to 17 B1.

PRODUCT

ZIP7 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 ZIP7 shRNA Plasmid (m): sc-76963-SH and ZIP7 shRNA (m) Lentiviral Particles: sc-76963-V as alternate gene silencing products.

For independent verification of ZIP7 (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-76963A, sc-76963B and sc-76963C.

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

ZIP7 siRNA (m) is recommended for the inhibition of ZIP7 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 ZIP7 gene expression knockdown using RT-PCR Primer: ZIP7 (m)-PR: sc-76963-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.