SANTA CRUZ BIOTECHNOLOGY, INC.

ZIP5 siRNA (h): sc-95666

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. ZIP5, also known as SLC39A5 (solute carrier family 39 (metal ion transporter), member 5) or LZT-Hs7, is a 539 amino acid multi-pass membrane protein that localizes to the basolateral cell membrane and belongs to the ZIP family of zinc transporters. Expressed in colon, liver, pancreas, kidney, spleen and small intestine, ZIP5 is thought to play a role in serosal-to-mucosal zinc transport, thereby influencing polarized cells and controlling organismal zinc status. The gene encoding ZIP5 maps to human chromosome 12, which encodes over 1,100 genes and comprises approximately 4.5% of the human genome.

REFERENCES

1. Taylor, K.M., et al. 2003. Structure-function analysis of LIV-1, the breast cancer-associated protein that belongs to a new subfamily of zinc transporters. Biochem. J. 375: 51-59.
2. Taylor, K.M. and Nicholson, R.I. 2003. The LZT proteins; the LIV-1 subfamily of zinc transporters. Biochim. Biophys. Acta 1611: 16-30.
3. Dufner-Beattie, J., et al. 2004. The adaptive response to dietary zinc in mice involves the differential cellular localization and zinc regulation of the zinc transporters ZIP4 and ZIP5. J. Biol. Chem. 279: 49082-49090.
4. Wang, F., et al. 2004. The mammalian ZIP5 protein is a zinc transporter that localizes to the basolateral surface of polarized cells. J. Biol. Chem. 279: 51433-51441.
5. Online Mendelian Inheritance in Man, OMIM™. 2004. Johns Hopkins University, Baltimore, MD. MIM Number: 608730. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. Huang, Z.L., et al. 2006. Expression and regulation of SLC39A family zinc transporters in the developing mouse intestine. Dev. Biol. 295: 571-579.
7. Weaver, B.P., et al. 2007. Novel zinc-responsive post-transcriptional mechanisms reciprocally regulate expression of the mouse SLC39A4 and SLC39A5 zinc transporters (ZIP4 and ZIP5). Biol. Chem. 388: 1301-1312.

CHROMOSOMAL LOCATION

Genetic locus: SLC39A5 (human) mapping to 12q13.3.

PRODUCT

ZIP5 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see ZIP5 shRNA Plasmid (h): sc-95666-SH and ZIP5 shRNA (h) Lentiviral Particles: sc-95666-V as alternate gene silencing products.

For independent verification of ZIP5 (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-95666A, sc-95666B and sc-95666C.

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

ZIP5 siRNA (h) is recommended for the inhibition of ZIP5 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 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 ZIP5 gene expression knockdown using RT-PCR Primer: ZIP5 (h)-PR: sc-95666-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.