SANTA CRUZ BIOTECHNOLOGY, INC.

ZIP9 siRNA (m): sc-76965

BACKGROUND

ZIP9 (zinc transporter ZIP9, Solute carrier family 39 member 9) is a multi-pass (seven transmembrane regions) membrane protein that belongs to the ZIP transporter (TC 2.A.5) family. Zinc transporters all have transmembrane domains, and are encoded by two SLC (solute-linked carrier) gene families: ZnT (SLC30) and Zip (SLC39). There are at least 9 ZnT and 15 Zip transporters in human cells. Zip transporters are believed to increase intracellular zinc by promoting zinc uptake. This may be facilitated by vesicles within the cell that release release into the cytoplasm. Zip and ZnT transporter families exhibit tissue-specific expression and respond differently to zinc deficiency and excess. ZIP9 has been shown to localize to the *trans*-Golgi network regardless of zinc presence. ZIP9 is believed to function as a zinc homeostasis regulator acting in the secretory pathway. This process seems to not significantly alter cytosolic zinc homeostasis.

REFERENCES

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3. Kumánovics, A., et al. 2006. YKE4 (YIL023C) encodes a bidirectional zinc transporter in the endoplasmic reticulum of Saccharomyces cerevisiae. J. Biol. Chem. 281: 22566-22574.
4. Devirgiliis, C., et al. 2007. Zinc fluxes and zinc transporter genes in chronic diseases. Mutat. Res. 622: 84-93.
5. Matsuura, W., et al. 2009. SLC39A9 (ZIP9) regulates zinc homeostasis in the secretory pathway: characterization of the ZIP subfamily I protein in vertebrate cells. Biosci. Biotechnol. Biochem. 73: 1142-1148.
6. Egefjord, L., et al. 2009. Zinc, α cells and glucagon secretion. Curr Diabetes Rev. 6: 52-57.
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8. Gustin, J.L., et al. 2009. MTP1-dependent Zn sequestration into shoot vacuoles suggests dual roles in Zn tolerance and accumulation in Zn-hyperaccumulating plants. Plant J. 57: 1116-1127.
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CHROMOSOMAL LOCATION

Genetic locus: Slc39a9 (mouse) mapping to 12 D1.

PROTOCOLS

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

PRODUCT

ZIP9 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 ZIP9 shRNA Plasmid (m): sc-76965-SH and ZIP9 shRNA (m) Lentiviral Particles: sc-76965-V as alternate gene silencing products.

For independent verification of ZIP9 (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-76965A, sc-76965B and sc-76965C.

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

ZIP9 siRNA (m) is recommended for the inhibition of ZIP9 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 ZIP9 gene expression knockdown using RT-PCR Primer: ZIP9 (m)-PR: sc-76965-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.