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SANTA CRUZ BIOTECHNOLOGY, INC.

ZIP4 siRNA (m): sc-155620

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. Zinc transporter ZIP4, also known as Zrt- and Irt-like protein 4 and solute carrier family 39 member 4, is a 647 amino acid multi-pass membrane protein that plays an important role in cellular zinc homeostasis. ZIP4 is highly expressed in stomach, small intestine, colon and kidney. Defects in the gene encoding ZIP4 is the cause of acrodermatitis enteropathica zinc-deficiency type (AEZ), an autosomal recessive disease that results from the inability to absorb zinc. Symptoms of AEZ include immune system dysfunction, dermatits, growth retardation, mental disorders and diarrhea. AEZ is treatable with zinc supplementation. There are two isoforms of ZIP4 that are produced as a result of alternative splicing events.

REFERENCES

1. Wang, K., et al. 2002. A novel member of a zinc transporter family is defective in acrodermatitis enteropathica. Am. J. Hum. Genet. 71: 66-73.
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4. Kim, B.E., et al. 2004. Zn^{2+}-stimulated endocytosis of the mZIP4 zinc transporter regulates its location at the plasma membrane. J. Biol. Chem. 279: 4523-4530.
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CHROMOSOMAL LOCATION

Genetic locus: Slc39a4 (mouse) mapping to 15 D3.

PRODUCT

ZIP4 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 ZIP4 shRNA Plasmid (m): sc-155620-SH and ZIP4 shRNA (m) Lentiviral Particles: sc-155620-V as alternate gene silencing products.

For independent verification of ZIP4 (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-155620A, sc-155620B and sc-155620C.

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

ZIP4 siRNA (m) is recommended for the inhibition of ZIP4 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 ZIP4 gene expression knockdown using RT-PCR Primer: ZIP4 (m)-PR: sc-155620-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.