SANTA CRUZ BIOTECHNOLOGY, INC.

ZIP2 siRNA (r): sc-270009

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. ZIP2 (Zrt- and Irt-like protein 2), also known as SLC39A2 (solute carrier family 39, member 2), Eti-1 or 6A1, is a 309 amino acid member of the ZIP transporter protein family. Localized to the cell membrane, ZIP2 mediates zinc uptake and may be involved in the uptake of other divalent cations. ZIP2 may also be involved in contact inhibition of normal epithelial cells and loss of ZIP2 may be involved in tumorigenesis. ZIP2 is expressed only in uterine and prostate epithelial cells.

REFERENCES

1. Gaither, L.A. and Eide, D.J. 2000. Functional expression of the human hZIP2 zinc transporter. J. Biol. Chem. 275: 5560-5564.
2. Dufner-Beattie, J., et al. 2003. Structure, function, and regulation of a subfamily of mouse zinc transporter genes. J. Biol. Chem. 278: 50142-50150.
3. Desouki, M.M., et al. 2007. hZIP2 and hZIP3 zinc transporters are down regulated in human prostate adenocarcinomatous glands. Mol. Cancer 6: 37.
4. Hosgood, H.D., et al. 2008. Pathway-based evaluation of 380 candidate genes and lung cancer susceptibility suggests the importance of the cell cycle pathway. Carcinogenesis 29: 1938-1943.
5. Zhang, L.Y., et al. 2008. Regulation of zinc transporters by dietary flaxseed lignan in human breast cancer xenografts. Mol. Biol. Rep. 35: 595-600.
6. Giacconi, R., et al. 2008. A novel ZIP2 Gln/Arg/Leu codon 2 polymorphism is associated with carotid artery disease in aging. Rejuvenation Res. 11: 297-300.
7. Hosgood, H.D., et al. 2009. PTEN identified as important risk factor of chronic obstructive pulmonary disease. Respir. Med. 103: 1866-1870.
8. Guey, L.T., et al. 2010. Genetic susceptibility to distinct bladder cancer subphenotypes. Eur. Urol. 57: 283-292.

CHROMOSOMAL LOCATION

Genetic locus: Slc39a2 (rat) mapping to 15p14.

PRODUCT

ZIP2 siRNA (r) 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 ZIP2 shRNA Plasmid (r): sc-270009-SH and ZIP2 shRNA (r) Lentiviral Particles: sc-270009-V as alternate gene silencing products.

For independent verification of ZIP2 (r) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-270009A, sc-270009B and sc-270009C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

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

ZIP2 siRNA (r) is recommended for the inhibition of ZIP2 expression in rat 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 ZIP2 gene expression knockdown using RT-PCR Primer: ZIP2 (r)-PR: sc-270009-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Du, L., et al. 2019. The critical role of the zinc transporter ZIP2 (SLC39A2) in ischemia/reperfusion injury in mouse hearts. J. Mol. Cell. Cardiol. 132: 136-145.

PROTOCOLS

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