SANTA CRUZ BIOTECHNOLOGY, INC.

HEPHL1 siRNA (m): sc-145942

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The Power to Question

BACKGROUND

Hephaestin is a single-pass type I membrane protein that belongs to the multicopper oxidase family of proteins. Hephaestin, a copper-dependent ferroxidase protein, is crucial for iron exiting intestinal enterocytes into the circulation. It mediates the movement of iron across the basolateral membrane in conjunction with ferroportin 1. This is an important link between iron and copper metabolism in mammalian systems, as copper deficiency leads to reduced hephaestin and reduced iron absorption resulting in anemia. HEPHL1 (Hephaestin-like protein 1) is a 1,159 amino acid single-pass transmembrane protein that is suggested to function as a ferroxidase and, like Hephaestin, binds 6 copper ions. HEPHL1 is likely involved in copper transport and homeostasis.

REFERENCES

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4. Gleeson, F., et al. 2005. Duodenal Dcytb and hephaestin mRNA expression are not significantly modulated by variations in body iron homeostasis. Blood. Cells. Mol. Dis. 35: 303-308.
5. Reeves, P.G., et al. 2005. Repletion of copper-deficient rats with dietary copper restores duodenal hephaestin protein and iron absorption. Exp. Biol. Med. 230: 320-325.
6. Hinoi, T., et al. 2005. CDX2-regulated expression of iron transport protein hephaestin in intestinal and colonic epithelium. Gastroenterology 128: 946-961.
7. Reeves, P.G., et al. 2005. Dietary copper deficiency reduces iron absorption and duodenal enterocyte hephaestin protein in male and female rats. J. Nutr. 135: 92-98.
8. Church, D.M., et al. 2009. Lineage-specific biology revealed by a finished genome assembly of the mouse. PLoS Biol. 7: e1000112.
9. LopezJimenez, N., et al. 2010. Examination of FGFRL1 as a candidate gene for diaphragmatic defects at chromosome 4p16.3 shows that Fgfrl1 null mice have reduced expression of Tpm3, sarcomere genes and Lrtm1 in the diaphragm. Hum. Genet. 127: 325-336.

CHROMOSOMAL LOCATION

Genetic locus: Hephl1 (mouse) mapping to 9 A2.

PROTOCOLS

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

PRODUCT

HEPHL1 siRNA (m) is a target-specific 19-25 nt siRNA 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 HEPHL1 shRNA Plasmid (m): sc-145942-SH and HEPHL1 shRNA (m) Lentiviral Particles: sc-145942-V as alternate gene silencing 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 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

HEPHL1 siRNA (m) is recommended for the inhibition of HEPHL1 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 HEPHL1 gene expression knockdown using RT-PCR Primer: HEPHL1 (m)-PR: sc-145942-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.