SANTA CRUZ BIOTECHNOLOGY, INC.

Hemopexin siRNA (h): sc-60778

BACKGROUND

Hemopexin (also known as β 1B glycoprotein or HPX), a 462 amino acid protein, functions as a scavenger and transporter of toxic plasma heme, transporting heme to the liver for breakdown and iron recovery. Hemopexin cooperates with Albumin, Haptoglobin, and high and low density lipoproteins to trap toxic plasma heme, which occurs as the result of the degradation of hemoglobin, myoglobin and enzymes with heme prosthetic groups, and to ensure the clearance of toxic heme from the plasma. After releasing the heme molecule, the free Hemopexin returns to circulation. It is expressed by the liver and is secreted in plasma. Hemopexin may play a role in the maintenance of metal ion homeostasis. It binds the following metal ions in order of highest to lowest affinity: nickel, copper, cobalt, zinc and manganese. Hemopexin can also act as a toxic protease that leads to proteinuria and glomerular alterations, which are characteristics of minimal changes disease (MCD), a common cause of nephrotic syndrome.

REFERENCES

1. Bakker, W.W., et al. 2005. Altered activity of plasma Hemopexin in patients with minimal change disease in relapse. Pediatr. Nephrol. 20: 1410-1415.
2. Bakker, W.W., et al. 2005. Protease activity of plasma Hemopexin. Kidney Int. 68: 603-610.
3. Mauk, M.R., et al. 2005. Metal ion binding to human Hemopexin. Biochemistry 44: 1864-1871.
4. Hvidberg, V., et al. 2005. Identification of the receptor scavenging Hemopexin-heme complexes. Blood 106: 2572-2579.
5. Nakaniwa, M., et al. 2005. Genomic sequences encoding two types of medaka Hemopexin-like protein Wap65 and their gene expression profiles in embryos. J. Exp. Biol. 208: 1915-1925.
6. Jaleel, A., et al. 2005. Identification of Amadori-modified plasma proteins in type 2 diabetes and the effect of short-term intensive Insulin treatment. Diabetes Care 28: 645-652.

CHROMOSOMAL LOCATION

Genetic locus: HPX (human) mapping to 11p15.4.

PRODUCT

Hemopexin 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 Hemopexin shRNA Plasmid (h): sc-60778-SH and Hemopexin shRNA (h) Lentiviral Particles: sc-60778-V as alternate gene silencing products.

For independent verification of Hemopexin (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-60778A, sc-60778B and sc-60778C.

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

Hemopexin siRNA (h) is recommended for the inhibition of Hemopexin 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.

GENE EXPRESSION MONITORING

Hemopexin (F-12): sc-373675 is recommended as a control antibody for monitoring of Hemopexin gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Hemopexin gene expression knockdown using RT-PCR Primer: Hemopexin (h)-PR: sc-60778-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.