SANTA CRUZ BIOTECHNOLOGY, INC.

Hepatic Lipase siRNA (h): sc-35560

BACKGROUND

The Lipase family belongs to one of the most robust genetic superfamilies found in living organisms that includes esterases and thioesterases. Lipase gene products are related by tertiary structure rather than primary amino acid sequence. Balancing the composition and the transport of lipoproteins in human plasma is essential for normal body function and is mediated in part by Hepatic Lipase, also known as HL or LIPC. Rare deficiencies in Hepatic Lipase have been identified in humans, which lead to pathologic levels of circulating lipoprotein particles; this condition is associated with coronary artery disease (CAD). Hepatic lipase is regulated by thyroid hormones and has a dual function as a triglyceride hydrolase and a ligand/bridging factor for receptor-mediated lipoprotein uptake. Hepatic Lipase localizes to the endo-thelial surfaces of extrahepatic tissues. The human Hepatic Lipase gene spans over 60 kb, contains nine exons and eight introns, and encodes a 499 amino acid protein.

REFERENCES

1. Cai, S.J., Wong, D.M., Chen, S.H. and Chan, L. 1989. Structure of the human hepatic triglyceride lipase gene. Biochemistry 28: 8966-8971.
2. Castro Cabezas, M., Halkes, C.J. and Erkelens, D.W. 2001. Obesity and free fatty acids: double trouble. Nutr. Metab. Cardiovasc. Dis. 11: 134-142.
3. Wong, H. and Schotz, M.C. 2002. The Lipase gene family. J. Lipid Res. 43: 993-999.
4. Shohet, R.V., Vega, G.L., Bersot, T.P., Mahley, R.W., Grundy, S.M., Guerra, R. and Cohen, J.C. 2002. Sources of variability in genetic association studies: insights from the analysis of Hepatic Lipase (LIPC). Hum. Mutat. 19: 536-542.
5. Ji, J., Herbison, C.E., Mamotte, C.D., Burke, V., Taylor, R.R. and van Bockxmeer, F.M. 2002. Hepatic Lipase gene -514 C/T polymorphism and premature coronary heart disease. J. Cardiovasc. Risk 9: 105-113.
6. Carr, M.C., Ayyobi, A.F., Murdoch, S.J., Deeb, S.S. and Brunzell, J.D. 2002. Contribution of Hepatic Lipase, lipoprotein lipase, and cholesteryl ester transfer protein to LDL and HDL heterogeneity in healthy women. Arterioscler. Thromb. Vasc. Biol. 22: 667-673.
7. Duntas, L.H. 2002. Thyroid disease and lipids. Thyroid 12: 287-293.

CHROMOSOMAL LOCATION

Genetic Locus: LIPC (human) mapping to 15q21.3.

PRODUCT

Hepatic Lipase 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 Hepatic Lipase shRNA Plasmid (h): sc-35560-SH and Hepatic Lipase shRNA (h) Lentiviral Particles: sc-35560-V as alternate gene silencing products.

For independent verification of Hepatic Lipase (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-35560A, sc-35560B and sc-35560C.

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

Hepatic Lipase siRNA (h) is recommended for the inhibition of Hepatic Lipase 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

Hepatic Lipase (XHL3-6): sc-21740 is recommended as a control antibody for monitoring of Hepatic Lipase 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 Hepatic Lipase gene expression knockdown using RT-PCR Primer: Hepatic Lipase (h)-PR: sc-35560-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.