

apoC-II siRNA (h): sc-41184

BACKGROUND

Apolipoproteins are protein components of plasma lipoproteins. The apolipoprotein C gene family encodes four homologous proteins designated apoC-I to -IV, which specifically modulate the metabolism of triglyceride-rich lipoproteins. The human apoC-I gene maps to chromosome 19q13.32 and is expressed primarily in the liver where it is activated when monocytes differentiate into macrophages. The human apoC-II gene maps to chromosome 19q13.32 and encodes a 79 amino acid single chain protein that is a necessary cofactor for the activation of lipoprotein lipase, the enzyme that hydrolyzes triglycerides in plasma and transfers the fatty acids to tissues. The human apoC-III gene maps to chromosome 11q23.3 and encodes a protein that may delay catabolism of triglyceride-rich particles by inhibiting lipoprotein lipase and hepatic lipase. The human apoC-IV gene maps to chromosome 19q13.32 and encodes a 127 amino acid protein that is primarily expressed in the liver.

REFERENCES

1. Breckenridge, W.C., Little, J.A., Steiner, G., Chow, A. and Poapst, M. 1978. Hypertriglyceridemia associated with deficiency of apolipoprotein C-II. N. Engl. J. Med. 298: 1265-1273.
2. Allan, C.M., Walker, D., Segrest, J.P. and Taylor, J.M. 1995. Identification and characterization of a new human gene (apoC4) in the apolipoprotein E, C-I and C-II gene locus. Genomics 28: 291-300.
3. Zhang, L.H., Kotite, L. and Havel, R.J. 1996. Identification, characterization, cloning, and expression of apolipoprotein C-IV, a novel sialoglycoprotein of rabbit plasma lipoproteins. J. Biol. Chem. 271: 1776-1783.
4. Dang, Q. and Taylor, J. 1996. *In vivo* footprinting analysis of the hepatic control region of the human apolipoprotein E/C-I/C-IV/C-II gene locus. J. Biol. Chem. 271: 28667-28676.
5. Allan, C.M. and Taylor, J.M. 1996. Expression of a novel human apolipoprotein (apoC-IV) causes hypertriglyceridemia in transgenic mice. J. Lipid Res. 37: 1510-1518.
6. Online Mendelian Inheritance in Man, OMIM[™]. 1998. Johns Hopkins University, Baltimore, MD. MIM Number: 207750. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>

CHROMOSOMAL LOCATION

Genetic locus: APOC2 (human) mapping to 19q13.32.

PRODUCT

apoC-II 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see apoC-II shRNA Plasmid (h): sc-41184-SH and apoC-II shRNA (h) Lentiviral Particles: sc-41184-V as alternate gene silencing products.

For independent verification of apoC-II (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-41184A, sc-41184B and sc-41184C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

apoC-II siRNA (h) is recommended for the inhibition of apoC-II 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 μ M in 66 μ l. 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

apoC-II (3E4): sc-293340 is recommended as a control antibody for monitoring of apoC-II 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 apoC-II gene expression knockdown using RT-PCR Primer: apoC-II (h)-PR: sc-41184-PR (20 μ l). 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.