SANTA CRUZ BIOTECHNOLOGY, INC.

apoA siRNA (h): sc-41176

BACKGROUND

Apolipoproteins are protein components of plasma lipoproteins. The human apoA-I gene encodes a single chain, 243 amino acid protein which promotes cholesterol efflux from tissues to the liver for excretion. Apolipoprotein A-I is the major protein component of high density lipoprotein (HDL) in the plasma. It can function as a cofactor for lecithin cholesterolacyltransferase (LCAT), which is responsible for the formation of most plasma cholesteryl esters. The human apoA-II gene encodes the second most abundant protein of HDL particles, where it influences plasma levels of free fatty acids (FFA). The human apoA-IV gene encodes a 396 amino acid preprotein, which after proteolytic processing is secreted from the intestine in association with chylomicron particles. ApoA-IV is a potent activator of LCAT *in vitro*. The human apoA-V gene encodes a 366 amino acid protein that is believed to be an important determinant of plasma triglyceride levels.

REFERENCES

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2. Qin, S., et al. 2000. Phospholipid transfer protein gene knock-out mice have low high density lipoprotein levels, due to hypercatabolism, and accumulate apoA-IV-rich lamellar lipoproteins. J. Lipid Res. 41: 269-276.
3. Fournier, N., et al. 2000. Human ApoA-IV overexpression in transgenic mice induces cAMP-stimulated cholesterol efflux from J774 macrophages to whole serum. Arterioscler. Thromb. Vasc. Biol. 20: 1283-1292.
4. Deeg, M.A., et al. 2001. GPI-specific phospholipase D associates with an apoA-I- and apoA-IV-containing complex. J. Lipid Res. 42: 442-451.
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6. Verges, B., et al. 2001. Increased plasma apoA-IV level is a marker of abnormal postprandial lipemia: a study in normoponderal and obese subjects. J. Lipid Res. 42: 2021-2029.
7. Ezeh, B., et al. 2003. Plasma distribution of apoA-IV in patients with coronary artery disease and healthy controls. J. Lipid Res. 44: 1523-1529.
8. Gallagher, J.W., et al. 2004. apoA-IV tagged with the ER retention signal KDEL perturbs the intracellular trafficking and secretion of apoB. J. Lipid Res. 45: 1826-1834.
9. Navarro, M.A., et al. 2004. Response of apoA-IV in pigs to long-term increased dietary oil intake and to the degree of unsaturation of the fatty acids. Br. J. Nutr. 92: 763-769.

CHROMOSOMAL LOCATION

Genetic locus: LPA (human) mapping to 6q25.3.

PROTOCOLS

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

PRODUCT

apoA shRNA Plasmid (h) is a target-specific lentiviral vector plasmid encoding a 19-25 nt (plus hairpin) shRNA designed to knock down gene expression. Each plasmid contains a puromycin resistance gene for the selection of cells stably expressing shRNA. Each vial contains 20 µg of lyophilized shRNA plasmid DNA. Suitable for up to 20 transfections. Also see apoA siRNA (h): sc-41176 and apoA shRNA (h) Lentiviral Particles: sc-41176-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

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

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor apoA gene expression knockdown using RT-PCR Primer: apoA (h)-PR: sc-41176-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.