

apoA-I siRNA (m): sc-63361

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. Maezawa, I., et al. 2004. apoE isoforms and apoA-I protect from Amyloid precursor protein carboxy-terminal fragment-associated cytotoxicity. *J. Neurochem.* 91: 1312-1321.
3. Maiorano, J.N., et al. 2004. Identification and structural ramifications of a hinge domain in apoA-I discoidal high-density lipoproteins of different size. *Biochemistry* 43: 11717-11726.
4. Zhu, H.L., et al. 2004. Conformation and lipid binding of the N-terminal (1-44) domain of human apoA-I. *Biochemistry* 43: 13156-13164.
5. Maejima, T., et al. 2004. Effect of pitavastatin on apoA-I production in Hep G2 cell. *Biochem. Biophys. Res. Commun.* 324: 835-839.
6. Cohen, J.C., et al. 2004. Multiple rare alleles contribute to low plasma levels of HDL cholesterol. *Science* 305: 869-872.
7. Fullerton, S.M., et al. 2004. The effects of scale: variation in the apoA1/C3/A4/A5 gene cluster. *Hum. Genet.* 115: 36-56.
8. Natarajan, P., et al. 2004. Identification of an apoA-I structural element that mediates cellular cholesterol efflux and stabilizes ATP binding cassette transporter A1. *J. Biol. Chem.* 279: 24044-24052.

CHROMOSOMAL LOCATION

Genetic locus: ApoA1 (mouse) mapping to 9 A5.2.

PRODUCT

apoA-I siRNA (m) 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 apoA-I shRNA Plasmid (m): sc-63361-SH and apoA-I shRNA (m) Lentiviral Particles: sc-63361-V as alternate gene silencing products.

For independent verification of apoA-I (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-63361A, sc-63361B and sc-63361C.

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

apoA-I siRNA (m) is recommended for the inhibition of apoA-I 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 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

apoA-I (4): sc-135837 is recommended as a control antibody for monitoring of apoA-I 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor apoA-I gene expression knockdown using RT-PCR Primer: apoA-I (m)-PR: sc-63361-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Mogilenko, D.A., et al. 2012. Endogenous apolipoprotein A-I stabilizes ATP-binding cassette transporter A1 and modulates Toll-like receptor 4 signaling in human macrophages. *FASEB J.* 26: 2019-2030.

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.