SANTA CRUZ BIOTECHNOLOGY, INC.

apoO siRNA (h): sc-90923

BACKGROUND

Apolipoproteins are a family of fatty-acid binding proteins that transport fat through the bloodstream in the form of lipoproteins. apoO (apolipoprotein O), also known as FAM121B or My025, is a 198 amino acid single-pass membrane protein that belongs to the apolipoprotein family. Expressed ubiquitously with particularly high expression in diabetic heart tissue, apoO functions to promote the transport of cholesterol from macrophage cells and may be involved in regulatory mechanisms that protect lipid accumulation within the heart. apoO is present in high density lipoproteins (HDLs) and low density lipoproteins (LDLs) and is secreted by an MTP (microsomal triglyceride transfer protein)-dependent mechanism. Two isoforms of apoO exist due to alternative splicing events.

REFERENCES

1. Bjorkegren, J., et al. 2001. Lipoprotein secretion and triglyceride stores in the heart. J. Biol. Chem. 276: 38511-38517.
2. van der Vliet, H.N., et al. 2001. Apolipoprotein A-V: a novel apolipoprotein associated with an early phase of liver regeneration. J. Biol. Chem. 276: 44512-44520.
3. Offer, T. and Samuni, A. 2002. Nitroxides inhibit peroxyl radical-mediated DNA scission and enzyme inactivation. Free Radic. Biol. Med. 32: 872-881.
4. Nielsen, L.B. 2002. Lipoprotein production by the heart: a novel pathway of triglyceride export from cardiomyocytes. Scand. J. Clin. Lab. Invest. Suppl. 237: 35-40.
5. Clark, H.F., et al. 2003. The secreted protein discovery initiative (SPDI), a large-scale effort to identify novel human secreted and transmembrane proteins: a bioinformatics assessment. Genome Res. 13: 2265-2270.
6. Lamant, M., et al. 2006. ApoO, a novel apolipoprotein, is an original glycoprotein up-regulated by diabetes in human heart. J. Biol. Chem. 281: 36289-36302.
7. Kassab, A., et al. 2008. Homocysteine enhances LDL fatty acid peroxidation, promoting microalbuminuria in type 2 diabetes. Ann. Clin. Biochem. 45: 476-480.

CHROMOSOMAL LOCATION

Genetic locus: APOO (human) mapping to Xp22.11.

PRODUCT

apoO 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 apoO shRNA Plasmid (h): sc-90923-SH and apoO shRNA (h) Lentiviral Particles: sc-90923-V as alternate gene silencing products.

For independent verification of apoO (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-90923A, sc-90923B and sc-90923C.

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

apoO siRNA (h) is recommended for the inhibition of apoO 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 apoO gene expression knockdown using RT-PCR Primer: apoO (h)-PR: sc-90923-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Zhou, C., et al. 2016. INO80 is required for osteogenic differentiation of human mesenchymal stem cells. Sci. Rep. 6: 35924.

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.