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apoD siRNA (h): sc-45518

BACKGROUND

Lipids, such as phospholipids, triacylglycerols and cholesterol, are weakly soluble in aqueous solution and therefore are transported by circulation as components of lipoproteins. Lipoproteins are globular particles that consist of a non-polar core of triacylglycerols and cholesteryl esters surrounded by phospholipid, cholesterol and an amphiphilic coating of protein, known as apolipoproteins (apo). These complexes allow the dissolution and shuttling of their non-polar lipid components. At least nine different apolipoproteins are distributed in significant amounts in different human lipoproteins. Apolipoprotein D (apoD) is a member of the lipocalin superfamily of transporter proteins that bind small hydrophobic molecules, including arachidonic acid (AA). The ability of apoD to bind AA implicates it in pathways associated with membrane phospholipid signal transduction and metabolism. ApoD expression has been shown to correlate both with cell cycle arrest and with prognosis in several types of malignancy, including central nervous system astrocytomas and medulloblastomas.

REFERENCES

1. Yao, J.K., et al. 2005. Association of plasma apolipoproteins D with RBC membrane arachidonic acid levels in schizophrenia. *Schizophr. Res.* 72: 259-266.
2. Ganfornina, M.D., et al. 2005. Molecular characterization and developmental expression pattern of the chicken apolipoprotein D gene: implications for the evolution of vertebrate lipocalins. *Dev. Dyn.* 232: 191-199.
3. Hildebrand, M.S., et al. 2005. Expression of the carrier protein apolipoprotein D in the mouse inner ear. *Hear. Res.* 200: 102-114.
4. Utsunomiya, T., et al. 2005. Clinicopathologic and prognostic values of apolipoprotein D alterations in hepatocellular carcinoma. *Int. J. Cancer* 116: 105-109.
5. Desai, P.P., et al. 2005. Apolipoprotein D is a component of compact but not diffuse Amyloid- β plaques in Alzheimer's disease temporal cortex. *Neurobiol. Dis.* 20: 574-582.

CHROMOSOMAL LOCATION

Genetic locus: APOD (human) mapping to 3q29.

PRODUCT

apoD 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 apoD shRNA Plasmid (h): sc-45518-SH and apoD shRNA (h) Lentiviral Particles: sc-45518-V as alternate gene silencing products.

For independent verification of apoD (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-45518A, sc-45518B and sc-45518C.

PROTOCOLS

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

apoD siRNA (h) is recommended for the inhibition of apoD 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

apoD (C-1): sc-373965 is recommended as a control antibody for monitoring of apoD 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 apoD gene expression knockdown using RT-PCR Primer: apoD (h)-PR: sc-45518-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.