SANTA CRUZ BIOTECHNOLOGY, INC.

apoB48R siRNA (h): sc-93294

BACKGROUND

ApoB48R (apolipoprotein B48 receptor), also known as apolipoprotein B-100 receptor, is a 1,088 amino acid protein that functions as a macrophage receptor by binding to apoB of dietary triglyceride-rich lipoproteins or to a similar apoB-like domain in hypertriglyceridemic very low density lipoprotein (HTG-VLDL). ApoB48R may contribute necessary lipids, lipid-soluble vitamins and other nutrients to reticuloendothelial cells. Significantly elevated plasma triglyceride levels may cause apoB48R to be a factor in foam cell formation, endothelial dysfunction and atherothrombogenesis. ApoB48R also mediates the swift, high-affinity uptake of chylomicrons, HTG-VLDL and trypsinized VLDL lacking apoE in *in vitro* macrophages. Conserved in chimpanzee, canine, bovine, mouse and rat, apoB48R is ubiquitously expressed in all tissues, except skeletal muscle, with high expression in lung and placenta, and low expression in brain and heart. ApoB48R is encoded by a gene that maps to human chromosome 16p11.2 and exists as three alternatively spliced isoforms.

REFERENCES

1. Brown, M.L., et al. 2000. A macrophage receptor for apolipoprotein B48: cloning, expression, and atherosclerosis. Proc. Natl. Acad. Sci. USA 97: 7488-7493.
2. Kawakami, A., et al. 2005. Pitavastatin inhibits remnant lipoprotein-induced macrophage foam cell formation through apoB48 receptor-dependent mechanism. Arterioscler. Thromb. Vasc. Biol. 25: 424-429.
3. Palmer, A.M., et al. 2005. Differential uptake of subfractions of triglyceride-rich lipoproteins by THP-1 macrophages. Atherosclerosis 180: 233-244.
4. Fujita, Y., et al. 2005. Association of nucleotide variations in the apolipoprotein B48 receptor gene (ApoB48R) with hypercholesterolemia. J. Hum. Genet. 50: 203-209.
5. Bosco, M.C., et al. 2006. Hypoxia modifies the transcriptome of primary human monocytes: modulation of novel immune-related genes and identification of CC-chemokine ligand 20 as a new hypoxia-inducible gene. J. Immunol. 177: 1941-1955.
6. Bejta, F., et al. 2007. Oxidation of chylomicron remnant-like particles inhibits their uptake by THP-1 macrophages by apolipoprotein E-dependent processes. Biochim. Biophys. Acta 1771: 901-910.
7. Lumeng, C.N., et al. 2007. Increased inflammatory properties of adipose tissue macrophages recruited during diet-induced obesity. Diabetes 56: 16-23.
8. Kwak-Kim, J., et al. 2009. Recurrent pregnancy loss: a disease of inflammation and coagulation. J. Obstet. Gynaecol. Res. 35: 609-622.
9. Xiao, S., et al. 2010. Understanding PRRSV infection in porcine lung based on genome-wide transcriptome response identified by deep sequencing. PLoS ONE 5: e11377.

PROTOCOLS

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

CHROMOSOMAL LOCATION

Genetic locus: APOBR (human) mapping to 16p11.2.

PRODUCT

apoB48R 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 apoB48R shRNA Plasmid (h): sc-93294-SH and apoB48R shRNA (h) Lentiviral Particles: sc-93294-V as alternate gene silencing products.

For independent verification of apoB48R (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-93294A, sc-93294B and sc-93294C.

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

apoB48R siRNA (h) is recommended for the inhibition of apoB48R 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 apoB48R gene expression knockdown using RT-PCR Primer: apoB48R (h)-PR: sc-93294-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.