SANTA CRUZ BIOTECHNOLOGY, INC.

ABCG8 siRNA (m): sc-140763

BACKGROUND

The ABCG (White) subfamily of ABC transporters, which includes ABCG1, ABCG5 and ABCG8, are critically involved in the regulation of lipid-trafficking mechanisms in macrophages, hepatocyes, and intestinal mucosa cells. ABCG8 (also designated Sterolin-2) is expressed in the liver, small intestine, and colon. ABCG8 normally cooperates with ABCG5 to limit intestinal absorption and to promote biliary excretion of sterols, whereas mutated forms of ABCG8 and ABCG5 cause sterol accumulation and atherosclerosis. ABCG8 and ABCG5 genes are also distinct targets of the LXRα and LXRβ oxysterol receptors, which serve as sterol sensors to coordinately regulate sterol catabolism, storage, efflux and elimination. Mutations in either ABCG8 or ABCG5 lead to sitosterolemia, a rare autosomal recessive disorder characterized by hyperabsorption of all sterols, including cholesterol and plant and shellfish sterols. Patients with this disease are hypercholesterolemic and frequently develop xanthomas, accelerated atherosclerosis, and premature coronary artery disease.

REFERENCES

1. Berge, K.E., et al. 2000. Accumulation of dietary cholesterol in sitosterolemia caused by mutations in adjacent ABC transporters. Science 290: 1771-1775.
2. Lee, M.H., et al. 2001. Genetic basis of sitosterolemia. Curr. Opin. Lipidol. 12: 141-149.
3. Schmitz, G., et al. 2001. Role of ABCG1 and other ABCG family members in lipid metabolism. J. Lipid Res. 42: 1513-1520.
4. Lee, M.H., et al. 2001. Identification of a gene, ABCG5, important in the regulation of dietary cholesterol absorption. Nat. Genet. 27: 79-83.
5. Lu, K., et al. 2001. Two genes that map to the stsl locus cause sitosterolemia: genomic structure and spectrum of mutations involving sterolin-1 and sterolin-2, encoded by ABCG5 and ABCG8, respectively. Am. J. Hum. Genet. 69: 278-290.
6. Repa, J.J., et al. 2002. Regulation of ATP-binding cassette sterol transporters ABCG5 and ABCG8 by the liver X receptors α and β. J. Biol. Chem. 277: 18793-18800.

CHROMOSOMAL LOCATION

Genetic locus: Abcg8 (mouse) mapping to 17 E4.

PRODUCT

ABCG8 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see ABCG8 shRNA Plasmid (m): sc-140763-SH and ABCG8 shRNA (m) Lentiviral Particles: sc-140763-V as alternate gene silencing products.

For independent verification of ABCG8 (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-140763A, sc-140763B and sc-140763C.

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

ABCG8 siRNA (m) is recommended for the inhibition of ABCG8 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 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 ABCG8 gene expression knockdown using RT-PCR Primer: ABCG8 (m)-PR: sc-140763-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.

PROTOCOLS

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