SANTA CRUZ BIOTECHNOLOGY, INC.

ABCG1 siRNA (h): sc-41138

BACKGROUND

ABCG1 (also designated ABC8 or human white gene), a member of the evolutionary conserved family of ATP-binding cassette (ABC) transporters, exhibits high homology with the *Drosophila* white gene. ABC transporters couple the energy of ATP hydrolysis to the translocation of various molecules across biological membranes. These proteins contain characteristic ATP-binding domains and transmembrane domains which form a channel-like structure for transport. ABCG1 functions to regulate cholesterol and phospholipid transport in macrophages. ABCG1 is highly expressed in several tissues, including brain, spleen, lung and placenta, and has been localized to the cell surface and intracellular compartments of cholesterol-laden macrophages.

REFERENCES

1. Hyde, S.C., et al. 1990. Structural model of ATP-binding proteins associated with cystic fibrosis, multidrug resistance and bacterial transport. Nature 346: 362-365.
2. Dean, M., et al. 1995. Evolution of ATP-binding cassette transporter genes. Curr. Opin. Genet. Dev. 5: 779-785.
3. Chen, H., et al. 1996. Cloning of the cDNA for a human homolog of the *Drosophila* white gene and mapping to chromosome 21q22.3. Am. J. Hum. Genet. 59: 66-75.
4. Savary, S., et la. 1996. Molecular cloning of a mammalian ABC transporter homologous to *Drosophila* white gene. Mamm. Genome 7: 673-676.
5. Croop, J.M., et al. 1997. Isolation and characterization of a mammalian homolog of the *Drosophila* white gene. Gene 185: 77-85.
6. Schwiebert, E.M. 1999. ABC transporter-facilitated ATP conductive transport. Am. J. Physiol. 276: C1-C8.
7. Klucken, J., et al. 2000. ABCG1 (ABC8), the human homolog of the *Drosophila* white gene, is a regulator of macrophage cholesterol and phospholipid transport. Proc. Natl. Acad. Sci. USA 97: 817-822.

CHROMOSOMAL LOCATION

Genetic locus: ABCG1 (human) mapping to 21q22.3.

PRODUCT

ABCG1 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 ABCG1 shRNA Plasmid (h): sc-41138-SH and ABCG1 shRNA (h) Lentiviral Particles: sc-41138-V as alternate gene silencing products.

For independent verification of ABCG1 (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-41138A, sc-41138B and sc-41138C.

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 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

ABCG1 siRNA (h) is recommended for the inhibition of ABCG1 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 ABCG1 gene expression knockdown using RT-PCR Primer: ABCG1 (h)-PR: sc-41138-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. Hayashi, T., et al. 2014. Endothelial cellular senescence is inhibited by liver X receptor activation with an additional mechanism for its atheroprotection in diabetes. Proc. Natl. Acad. Sci. USA 111: 1168-1173.
2. Zeng, Y., et al. 2018. Dihydromyricetin ameliorates foam cell formation via LXRα-ABCA1/ABCG1-dependent cholesterol efflux in macrophages. Biomed. Pharmacother. 101: 543-552.

RESEARCH USE

For research use only, not for use in diagnostic procedures.