SANTA CRUZ BIOTECHNOLOGY, INC.

Squalene epoxidase siRNA (h): sc-61608

BACKGROUND

Several proteins mediate the biosynthesis of cholesterol. The first specific step in the cholesterol biosynthetic pathway is the conversion of transfarnesyl-diphosphate to Squalene, which is catalyzed by the endoplasmic reticulum membrane-associated enzyme Squalene synthetase, also designated Squalene synthase and Farnesyl-diphosphate farnesyltransferase. Squalene synthetase is located at a branch point in the mevalonate pathway and is also involved in isoprenoid biosynthesis. Squalene epoxidase, also designated Squalene monooxygenase, is a multi-pass microsomal membrane-associated enzyme that catalyzes the first oxygenation step in sterol biosynthesis and most likely functions as one of the rate-limiting enzymes in this pathway. Squalene epoxidase may form a complex with Squalene synthetase.

REFERENCES

1. Nagai, M., et al. 1997. Localization of the Squalene epoxidase gene (SQLE) to human chromosome region 8q24.1. Genomics 44: 141-143.
2. Pasrija, R., et al. 2005. Squalene epoxidase encoded by ERG1 affects morphogenesis and drug susceptibilities of *Candida albicans*. J. Antimicrob. Chemother. 55: 905-913.
3. Nishimura, T., et al. 2005. Inhibition of cholesterol biosynthesis by 25-hydroxycholesterol is independent of OSBP. Genes Cells 10: 793-801.
4. Germann, M., et al. 2005. Characterizing sterol defect suppressors uncovers a novel transcriptional signaling pathway regulating zymosterol biosynthesis. J. Biol. Chem. 280: 35904-35913.
5. Ono, T. 2005. Studies of the FABP family: a retrospective. Mol. Cell. Biochem. 277: 1-6.
6. Xu, F., et al. 2005. Dual roles for cholesterol in mammalian cells. Proc. Natl. Acad. Sci. USA 102: 14551-14556.
7. Ruckenstuhl, C., et al. 2005. Single amino acid exchanges in FAD-binding domains of Squalene epoxidase of *Saccharomyces cerevisiae* lead to either loss of functionality or terbinafine sensitivity. Biochem. Soc. Trans. 33: 1197-1201.

CHROMOSOMAL LOCATION

Genetic locus: SQLE (human) mapping to 8q24.13.

PRODUCT

Squalene epoxidase 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 Squalene epoxidase shRNA Plasmid (h): sc-61608-SH and Squalene epoxidase shRNA (h) Lentiviral Particles: sc-61608-V as alternate gene silencing products.

For independent verification of Squalene epoxidase (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-61608A, sc-61608B and sc-61608C.

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

Squalene epoxidase siRNA (h) is recommended for the inhibition of Squalene epoxidase 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.

GENE EXPRESSION MONITORING

Squalene epoxidase (H-6): sc-271651 is recommended as a control antibody for monitoring of Squalene epoxidase 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 Squalene epoxidase gene expression knockdown using RT-PCR Primer: Squalene epoxidase (h)-PR: sc-61608-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.