

β-ketoacyl synthase siRNA (h): sc-77981

BACKGROUND

β-ketoacyl synthase exists in mammals, fungi, plants and prokaryotes, but may exhibit different functions among various species. Mammalian β-ketoacyl synthase, which is also known as OXSM (3-oxoacyl-[acyl-carrier-protein] synthase, mitochondrial) or KS is a 459 amino acid protein expressed abundantly in heart, skeletal muscle, liver and kidney. β-ketoacyl synthase is localized to mitochondria where it aids in lipid metabolism and fatty acid biosynthesis. β-ketoacyl synthase may biosynthesize lipoic acid by generating its octanoyl-acyl carrier protein which is the precursor of Lipoic acid. For fatty acid biosynthesis, β-ketoacyl synthase is required for the construction of fatty acyl chains by connecting short carbon units together by Claisen condensation reactions. These fatty acid chains are important for phospholipid membranes. β-ketoacyl synthase can form a dimer and has a cysteine active site on its C-2 carbon. β-ketoacyl synthase is inactivated by cerulenin, an antibiotic which interacts with the active site on β-ketoacyl synthase and binds to the hydrophobic area that forms at the β-ketoacyl synthase dimer interface, thereby preventing dimerization.

REFERENCES

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PROTOCOLS

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

CHROMOSOMAL LOCATION

Genetic locus: OXSM (human) mapping to 3p24.2.

PRODUCT

β-ketoacyl synthase 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 β-ketoacyl synthase shRNA Plasmid (h): sc-77981-SH and β-ketoacyl synthase shRNA (h) Lentiviral Particles: sc-77981-V as alternate gene silencing products.

For independent verification of β-ketoacyl synthase (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-77981A, sc-77981B and sc-77981C.

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

β-ketoacyl synthase siRNA (h) is recommended for the inhibition of β-ketoacyl synthase 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 β-ketoacyl synthase gene expression knockdown using RT-PCR Primer: β-ketoacyl synthase (h)-PR: sc-77981-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.