#12588 Store at -20°C

SignalSilence® Fatty Acid Synthase siRNA I

Cell Signaling TECHNOLOGY®

☑ 10 µM in 300 µl (3 nmol)

Orders ■ 877-616-CELL (2355) orders@cellsignal.com
Support ■ 877-678-TECH (8324) info@cellsignal.com
Web ■ www.cellsignal.com

New 03/13

For Research Use Only. Not For Use In Diagnostic Procedures.

Species Cross-Reactivity: H

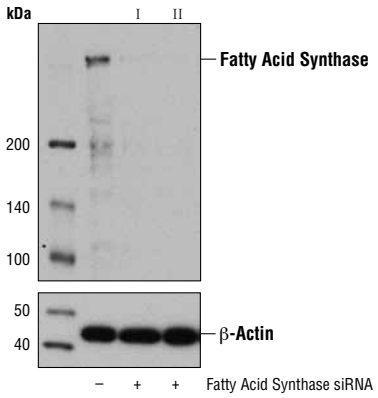
Description: SignalSilence® Fatty Acid Synthase siRNA I from Cell Signaling Technology (CST) allows the researcher to specifically inhibit fatty acid synthase expression using RNA interference, a method whereby gene expression can be selectively silenced through the delivery of double stranded RNA molecules into the cell. All SignalSilence® siRNA products from CST are rigorously tested in-house and have been shown to reduce target protein expression by western analysis.

Background: Fatty acid synthase (FASN) catalyzes the synthesis of long-chain fatty acids from acetyl-CoA and malonyl-CoA. FASN is active as a homodimer with seven different catalytic activities and produces lipids in the liver for export to metabolically active tissues or storage in adipose tissue. In most other human tissues, FASN is minimally expressed since they rely on circulating fatty acids for new structural lipid synthesis (1).

According to the research literature, increased expression of FASN has emerged as a phenotype common to most human carcinomas. For example in breast cancer, immunohistochemical staining showed that the levels of FASN are directly related to the size of breast tumors (2). Research studies also showed that FASN is highly expressed in lung and prostate cancers and that FASN expression is an indicator of poor prognosis in breast and prostate cancer (3-5). Furthermore, inhibition of FASN is selectively cytotoxic to human cancer cells (5). Thus, increased interest has focused on FASN as a potential target for the diagnosis and treatment of cancer as well as metabolic syndrome (6,7).

Directions for Use: CST recommends transfection with 100 nM SignalSilence® Fatty Acid Synthase siRNA I 48 to 72 hours prior to cell lysis. For transfection procedure, follow protocol provided by the transfection reagent manufacturer. Please feel free to contact CST with any questions on use.

Each vial contains the equivalent of 100 transfections, which corresponds to a final siRNA concentration of 100 nM per transfection in a 24-well plate with a total volume of 300 µl per well.



Western blot analysis of extracts from HeLa cells, transfected with 100 nM SignalSilence® Control siRNA (Unconjugated) #6568 (-), SignalSilence® Fatty Acid Synthase siRNA I (+), or SignalSilence® Fatty Acid Synthase siRNA II #12613 (+), using Fatty Acid Synthase (C20G5) Rabbit mAb #3180 (upper) or β-Actin (D6A8) Rabbit mAb #8457 (lower). The Fatty Acid Synthase (C20G5) Rabbit mAb confirms silencing of fatty acid synthase expression, while the β-Actin (D6A8) Rabbit mAb is used as a loading control.

Quality Control: Oligonucleotide synthesis is monitored base by base through trityl analysis to ensure appropriate coupling efficiency. The oligo is subsequently purified by affinity-solid phase extraction. The annealed RNA duplex is further analyzed by mass spectrometry to verify the exact composition of the duplex. Each lot is compared to the previous lot by mass spectrometry to ensure maximum lot-to-lot consistency.

Entrez-Gene ID #2194
Swiss-Prot Acc. #P49327

Storage: Fatty Acid Synthase siRNA I is supplied in RNAse-free water. *Aliquot and store at -20ºC.*

Please visit www.cellsignal.com for a complete listing of recommended companion products.

Background References:

(1) Katsurada, A. et al. (1990) *Eur J Biochem* 190, 427-33.
(2) Wells, W.A. et al. (2006) *Breast Cancer Res Treat* 98, 231-40.
(3) Kawamura, T. et al. (2005) *Pathobiology* 72, 233-240.
(4) Shah, U.S. et al. (2006) *Hum Pathol* 37, 401-409.
(5) Kuhajda, F.P. (2000) *Nutrition* 16, 202-8.
(6) Tian, W.X. (2006) *Curr Med Chem* 13, 967-977.
(7) Kusunoki, J. et al. (2006) *Endocrine* 29, 91-100.

Applications Key: **W**—Western **IP**—Immunoprecipitation **IHC**—Immunohistochemistry **ChIP**—Chromatin Immunoprecipitation **IF**—Immunofluorescence **F**—Flow cytometry **E-P**—ELISA-Peptide
Species Cross-Reactivity Key: **H**—human **M**—mouse **R**—rat **Hm**—hamster **Mk**—monkey **Mi**—mink **C**—chicken **Dm**—D. melanogaster **X**—Xenopus **Z**—zebrafish **B**—bovine **Dg**—dog **Pg**—pig **Sc**—S. cerevisiae **Ce**—C. elegans **Hr**—Horse **All**—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.