SANTA CRUZ BIOTECHNOLOGY, INC.

FAR1 siRNA (h): sc-96316

BACKGROUND

The conversion of fatty acids to fatty alcohols is required for the synthesis of wax monoesters and ether lipids. Members of the fatty acyl-CoA reductase family, including FAR1 (fatty acyl-CoA reductase 1) and FAR2 (fatty acyl-CoA reductase 2), play a role in catalyzing the reduction of saturated fatty acyl-CoA with chain length C16 or C18 to fatty alcohols. FAR1, also known as male sterility domain-containing protein 2 (MLSTD2) or short chain dehydrogenase/reductase family 10E, member 1 (SDR10E1), is a 515 amino acid single-pass membrane protein that localizes to the peroxisome, FAR1 is suggested to be essential for providing fatty alcohols required for ether bond formation in ether glycerophospholipid synthesis. The gene encoding FAR1 is located on chromosome 11p15.2, which comprises nearly 4% of the human genome.

REFERENCES

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2. Vioque, J. and Kolattukudy, P.E. 1997. Resolution and purification of an aldehyde-generating and an alcohol-generating fatty acyl-CoA reductase from pea leaves *(Pisum sativum L.).* Arch. Biochem. Biophys. 340: 64-72.
3. Yamashita, A., et al. 1997. Acyltransferases and transacylases involved in fatty acid remodeling of phospholipids and metabolism of bioactive lipids in mammalian cells. J. Biochem. 122: 1-16.
4. Phipps, A.N., et al. 2000. Peroxisome distribution along the crypt-villus axis of the guinea pig small intestine. Mol. Cell. Biochem. 203: 119-126.
5. Cheng, J.B. and Russell, D.W. 2004. Mammalian wax biosynthesis. I. Identification of two fatty acyl-Coenzyme A reductases with different substrate specificities and tissue distributions. J. Biol. Chem. 279: 37789-37797.
6. Costaglioli, P., et al. 2005. Profiling candidate genes involved in wax biosynthesis in *Arabidopsis thaliana* by microarray analysis. Biochim. Biophys. Acta 1734: 247-258.

CHROMOSOMAL LOCATION

Genetic locus: FAR1 (human) mapping to 11p15.2.

PRODUCT

FAR1 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 FAR1 shRNA Plasmid (h): sc-96316-SH and FAR1 shRNA (h) Lentiviral Particles: sc-96316-V as alternate gene silencing products.

For independent verification of FAR1 (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-96316A, sc-96316B and sc-96316C.

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

FAR1 siRNA (h) is recommended for the inhibition of FAR1 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 FAR1 gene expression knockdown using RT-PCR Primer: FAR1 (h)-PR: sc-96316-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.