SANTA CRUZ BIOTECHNOLOGY, INC.

PEMT siRNA (h): sc-106913

BACKGROUND

Phosphatidylethanolamine-N-methyltransferase (PEMT) catalyzes the conversion of phosphatidylethanolamine to phosphatidylcholine (PC) through three sequential methylation reactions. This pathway is primarily utilized in liver, whereas other cells utilize the 1,2-diacylglycerol cholinephosphotransferase (CDP-choline) pathway. PEMT activity participates in many physiologic processes, including the flux of lipid between liver and plasma and the delivery of essential fatty acids to blood and peripheral tissues via liver-derived lipoproteins. PEMT2, an isoform of the enzyme, regulates hepatocyte cell division by inhibiting proliferation. Loss of PEMT2 may contribute to the onset of liver carcinogenesis.

REFERENCES

1. Walkey, C.J., et al. 1996. Characterization of the murine phosphatidylethanolamine N-methyltransferase-2 gene. J. Lipid Res. 37: 2341-2350.
2. Walkey, C.J., et al. 1997. Disruption of the murine gene encoding phosphatidylethanolamine N-methyltransferase. Proc. Natl. Acad. Sci. USA 94: 12880-12885.
3. Vance, D.E., et al. 1997. Phosphatidylethanolamine N-methyltransferase from liver. Biochim. Biophys. Acta 1348: 142-150.
4. Walkey, C.J., et al. 1999. Identification of three novel cDNAs for human phosphatidylethanolamine N-methyltransferase and localization of the human gene on chromosome 17p11.2. Biochim. Biophys. Acta 1436: 405-412.
5. Watkins, S.M., et al. 2003. Phosphatidylethanolamine-N-methyltransferase activity and dietary choline regulate liver-plasma lipid flux and essential fatty acid metabolism in mice. J. Nutr. 133: 3386-3391.

CHROMOSOMAL LOCATION

Genetic locus: PEMT (human) mapping to 17p11.2.

PRODUCT

PEMT 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 PEMT shRNA Plasmid (h): sc-106913-SH and PEMT shRNA (h) Lentiviral Particles: sc-106913-V as alternate gene silencing products.

For independent verification of PEMT (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-106913A, sc-106913B and sc-106913C.

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.

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

PEMT siRNA (h) is recommended for the inhibition of PEMT 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 PEMT gene expression knockdown using RT-PCR Primer: PEMT (h)-PR: sc-106913-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.