SANTA CRUZ BIOTECHNOLOGY, INC.

PC-TP siRNA (h): sc-41363

BACKGROUND

Eukaryotic cells contain phospholipid transfer proteins that act as carriers of phospholipids between membranes. In mammalian tissues three transfer proteins with different specificities have been identified: the phosphatidylcholine transfer protein (PC-TP, also known as StARD2), the phosphatidylinositol transfer protein (PI-TP) and the non-specific lipid transfer protein (nsL-TP) that transfers all common diacyl-phospholipids and cholesterol. PC-TP is a cytosolic protein first purified from bovine and rat liver that catalyzes intermembrane transfer of PC. The highest expression of PC-TP is found in liver, placenta, testis, kidney, and heart, and lowest levels are found in brain and lung tissues. Pctp knockout mice showed no defects in the secretion of PC into bile or lung surfactant, and the lipid content and composition of bile and surfactant was normal. The authors concluded that PC-TP does not play a major role in transporting PC from the endoplasmic reticulum, where it is synthesized, to the hepatocyte canalicular membrane. The gene which encodes PC-TP maps to human chromosome 17q22.

REFERENCES

1. Wirtz, K.W. 1991. Phospholipid transfer proteins: from lipid monolayers to cells. Klin. Wochenschr. 69: 105-111.
2. Cohen, D.E., et al. 1999. Cloning, tissue-specific expression, gene structure and chromosomal localization of human phosphatidylcholine transfer protein. Biochim. Biophys. Acta 1447: 265-270.
3. van Helvoort, A., et al. 1999. Mice without phosphatidylcholine transfer protein have no defects in the secretion of phosphatidylcholine into bile or into lung airspaces. Proc. Natl. Acad. Sci. USA 96: 11501-11506.

CHROMOSOMAL LOCATION

Genetic locus: PCTP (human) mapping to 17q22.

PRODUCT

PC-TP 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 PC-TP shRNA Plasmid (h): sc-41363-SH and PC-TP shRNA (h) Lentiviral Particles: sc-41363-V as alternate gene silencing products.

For independent verification of PC-TP (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-41363A, sc-41363B and sc-41363C.

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

PC-TP siRNA (h) is recommended for the inhibition of PC-TP 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

PC-TP (LB-6): sc-101309 is recommended as a control antibody for monitoring of PC-TP 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 PC-TP gene expression knockdown using RT-PCR Primer: PC-TP (h)-PR: sc-41363-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Mao, G., et al. 2017. Transcription factor RUNX1 regulates platelet PCTP (phosphatidylcholine transfer protein): implications for cardiovascular events: differential effects of RUNX1 variants. Circulation 136: 927-939.

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.