SANTA CRUZ BIOTECHNOLOGY, INC.

MPV17L siRNA (h): sc-93329

BACKGROUND

MPV17L (MPV17 mitochondrial membrane protein-like), also known as MLPH1, MLPH2 or MPV17L1, is a 196 amino acid multi-pass membrane protein belonging to the peroxisomal membrane protein PXMP2/4 family. M-LPS (also known as M-LPH1) and M-LPL (also known as M-LPH2) are alternatively spliced isoforms of MPV17L and are ubiquitously expressed in human tissues, however only M-LPS exists at the protein level and mainly resides in kidney. MPV17L may be involved in protecting against mitochondrial oxidative stress and apoptosis, and participates in reactive oxygen species (ROS) metabolism by up- or down-regulating genes of antioxidant enzymes. MPV17L may play a role in the development of early-onset glomerulosclerosis, which is the hardening or formation of scar tissue of the glomerulus in the kidney. The gene encoding MPV17L maps to human chromosome 16p13.11.

REFERENCES

1. Iida, R., et al. 2001. Cloning, mapping, genomic organization, and expression of mouse M-LP, a new member of the peroxisomal membrane protein MPV17 domain family. Biochem. Biophys. Res. Commun. 283: 292-296.
2. Iida, R., et al. 2003. M-LP, MPV17-like protein, has a peroxisomal membrane targeting signal comprising a transmembrane domain and a positively charged loop and up-regulates expression of the manganese superoxide dismutase gene. J. Biol. Chem. 278: 6301-6306.
3. Schrader, M. and Fahimi, H.D. 2004. Mammalian peroxisomes and reactive oxygen species. Histochem. Cell Biol. 122: 383-393.
4. Iida, R., et al. 2005. A novel alternative spliced MPV17-like protein isoform localizes in cytosol and is expressed in a kidney- and adult-specific manner. Exp. Cell Res. 302: 22-30.
5. Iida, R., et al. 2006. Human Mpv17-like protein is localized in peroxisomes and regulates expression of antioxidant enzymes. Biochem. Biophys. Res. Commun. 344: 948-954.
6. Spinazzola, A., et al. 2006. MPV17 encodes an inner mitochondrial membrane protein and is mutated in infantile hepatic mitochondrial DNA depletion. Nat. Genet. 38: 570-575.
7. Wong, L.J., et al. 2007. Mutations in the MPV17 gene are responsible for rapidly progressive liver failure in infancy. Hepatology 46: 1218-1227.
8. Krick, S., et al. 2008. MPV17L protects against mitochondrial oxidative stress and apoptosis by activation of Omi/HtrA2 protease. Proc. Natl. Acad. Sci. USA 105: 14106-14111.
9. Magoulas, C., et al. 2009. Prediction of novel isoforms of the mouse Mpv17l protein. Genome 52: 968-974.

CHROMOSOMAL LOCATION

Genetic locus: MPV17L (human) mapping to 16p13.11.

ROTOCOLS

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

PRODUCT

MPV17L 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 MPV17L shRNA Plasmid (h): sc-93329-SH and MPV17L shRNA (h) Lentiviral Particles: sc-93329-V as alternate gene silencing products.

For independent verification of MPV17L (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-93329A, sc-93329B and sc-93329C.

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

MPV17L siRNA (h) is recommended for the inhibition of MPV17L 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 MPV17L gene expression knockdown using RT-PCR Primer: MPV17L (h)-PR: sc-93329-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.