SANTA CRUZ BIOTECHNOLOGY, INC.

PMVK siRNA (m): sc-76181

BACKGROUND

PMVK (phosphomevalonate kinase), also known as PMK, PMKA, PMKASE or HUMPMK, is a 192 amino acid peroxisomal enzyme belonging to the nucleoside monophosphate (NMP) kinase family and is expressed in heart, liver, skeletal muscle, kidney, and pancreas with lower expression in brain, placenta and lung. Induced by sterol, PMVK participates in isopentenyl diphosphate biosynthesis via the mevalonate pathway. PMVK catalyzes the conversion of mevalonate 5-phosphate into mevalonate 5-diphosphate in the fifth reaction of the cholesterol biosynthetic pathway. PMVK exists as a monomer and is encoded by a gene located on human chromosome 1, which houses over 3,000 genes and is the largest human chromosome spanning about 260 million base pairs and making up 8% of the human genome.

REFERENCES

1. Cho, Y.K., et al. 2001. Investigation of invariant serine/threonine residues in mevalonate kinase. Tests of the functional significance of a proposed substrate binding motif and a site implicated in human inherited disease. J. Biol. Chem. 276: 12573-12578.
2. Pilloff, D., et al. 2003. The kinetic mechanism of phosphomevalonate kinase. J. Biol. Chem. 278: 4510-4515.
3. Hogenboom, S., et al. 2003. Cholesterol biosynthesis is not defective in peroxisome biogenesis defective fibroblasts. Mol. Genet. Metab. 80: 290-295.
4. Hogenboom, S., et al. 2004. Phosphomevalonate kinase is a cytosolic protein in humans. J. Lipid Res. 45: 697-705.
5. Eyzaguirre, J., et al. 2006. Pig liver phosphomevalonate kinase: kinetic mechanism. Arch. Biochem. Biophys. 454: 189-196.
6. Herdendorf, T.J. and Miziorko, H.M. 2006. Phosphomevalonate kinase: functional investigation of the recombinant human enzyme. Biochemistry 45: 3235-3242.

CHROMOSOMAL LOCATION

Genetic locus: Pmvk (mouse) mapping to 3 F1.

PRODUCT

PMVK siRNA (m) 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 PMVK shRNA Plasmid (m): sc-76181-SH and PMVK shRNA (m) Lentiviral Particles: sc-76181-V as alternate gene silencing products.

For independent verification of PMVK (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-76181A, sc-76181B and sc-76181C.

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

PMVK siRNA (m) is recommended for the inhibition of PMVK expression in mouse 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 PMVK gene expression knockdown using RT-PCR Primer: PMVK (m)-PR: sc-76181-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.