

MVK siRNA (h): sc-106266

BACKGROUND

Mevalonate kinase (MVK) is an early enzyme in isoprenoid and sterol synthesis. Mevalonate kinase catalyzes the ATP-dependent phosphorylation of mevalonic acid to form mevalonate 5-phosphate. Mevalonate is a key intermediate, and mevalonate kinase a key early enzyme, in isoprenoid and sterol synthesis. Deficiency in MVK activity contributes to mevalonic aciduria and hyperimmunoglobulinemia D/periodic fever syndrome (HIDS). Mevalonic acid accumulates because of failure of conversion to 5-phosphomevalonic acid, which is catalyzed by mevalonate kinase. Mevalonic acid is synthesized from 3-hydroxy-3-methylglutaryl-CoA, a reaction catalyzed by HMG-CoA reductase.

REFERENCES

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3. Houten, S.M., et al. 1999. Mutations in MVK, encoding mevalonate kinase, cause hyperimmunoglobulinemia D and periodic fever syndrome. *Nat. Genet.* 22: 175-177.
4. Houten, S.M., et al. 2001. Organization of the mevalonate kinase (MVK) gene and identification of novel mutations causing mevalonic aciduria and hyperimmunoglobulinemia D and periodic fever syndrome. *Eur. J. Hum. Genet.* 9: 253-259.
5. Cuisset, L., et al. 2001. Molecular analysis of MVK mutations and enzymatic activity in hyper-IgD and periodic fever syndrome. *Eur. J. Hum. Genet.* 9: 260-266.
6. Fu, Z., et al. 2002. The structure of a binary complex between a mammalian mevalonate kinase and ATP: insights into the reaction mechanism and human inherited disease. *J. Biol. Chem.* 277: 18134-18142.
7. Houten, S.M., et al. 2003. Carrier frequency of the V377I (1129G>A) MVK mutation, associated with hyper-IgD and periodic fever syndrome, in the Netherlands. *Eur. J. Hum. Genet.* 11: 196-200.

CHROMOSOMAL LOCATION

Genetic locus: MVK (human) mapping to 12q24.11.

PRODUCT

MVK 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see MVK shRNA Plasmid (h): sc-106266-SH and MVK shRNA (h) Lentiviral Particles: sc-106266-V as alternate gene silencing products.

For independent verification of MVK (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-106266A, sc-106266B and sc-106266C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCL, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

MVK siRNA (h) is recommended for the inhibition of MVK 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 μ M in 66 μ l. 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

MVK (D-3): sc-390669 is recommended as a control antibody for monitoring of MVK 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 MVK gene expression knockdown using RT-PCR Primer: MVK (h)-PR: sc-106266-PR (20 μ l, 419 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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