

DLK1 siRNA (h): sc-39669

BACKGROUND

The human DLK1 gene maps to human chromosome 14q32.2 and encodes a 383 amino acid protein. DLK1, also designated preadipocyte factor 1 (pref-1), ZOG, pG2 or FA1, is a transmembrane protein with six tandem EGF-like repeats in the putative extracellular domain, which is characteristic of the EGF-like protein family. DLK1 shares homology with invertebrate homeotic proteins, including Delta and Notch, which are proteins that mediate normal neural differentiation in *Drosophila*. In mammalian preadipocytes, multiple discrete forms of DLK1 protein are present due to N-linked glycosylation. DLK1 is expressed in tumors with neuroendocrine features, such as neuroblastoma and pheochromocytoma cell lines. Normal tissue expression is restricted to the adrenal gland and placenta. Protein-protein interaction between DLK1 proteins belonging to the same or to different cells, or the interaction between soluble and membrane DLK1 variants, may be important in regulation of DLK1 function.

REFERENCES

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2. Laborda, J., et al. 1993. DLK, a putative mammalian homeotic gene differentially expressed in small cell lung carcinoma and neuroendocrine tumor cell line. *J. Biol. Chem.* 268: 3817-3820.
3. Smas, C.M., et al. 1994. Structural characterization and alternate splicing of the gene encoding the preadipocyte EGF-like protein pref-1. *Biochemistry* 33: 9257-9265.
4. Lee, Y.L., et al. 1995. DLK, pG2 and pref-1 mRNAs encode similar proteins belonging to the EGF-like superfamily. Identification of polymorphic variants of this RNA. *Biochim. Biophys. Acta* 1261: 223-232.
5. Gubina, E., et al. 1999. Assignment of DLK1 to human chromosome band 14q32 by *in situ* hybridization. *Cytogenet. Cell Genet.* 84: 206-207.
6. Baladron, V., et al. 2001. Specific regions of the extracellular domain of dlk, an EGF-like homeotic protein involved in differentiation, participate in intramolecular interactions. *Front. Biosci.* 6: A25-A32.

CHROMOSOMAL LOCATION

Genetic locus: DLK1 (human) mapping to 14q32.2.

PRODUCT

DLK1 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 DLK1 shRNA Plasmid (h): sc-39669-SH and DLK1 shRNA (h) Lentiviral Particles: sc-39669-V as alternate gene silencing products.

For independent verification of DLK1 (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-39669A, sc-39669B and sc-39669C.

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

DLK1 siRNA (h) is recommended for the inhibition of DLK1 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

DLK1 (B-7): sc-376755 is recommended as a control antibody for monitoring of DLK1 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 DLK1 gene expression knockdown using RT-PCR Primer: DLK1 (h)-PR: sc-39669-PR (20 μ l, 446 bp). 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.

PROTOCOLS

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