

DLK2 siRNA (m): sc-143055

BACKGROUND

DLK2 (δ homolog 2), also known as EGFL9 (Epidermal growth factor-like protein 9), is a 383 amino acid single-pass transmembrane protein with 6 tandem EGF-like repeats in the putative extracellular domain, which is characteristic of the EGF-like protein family. DLK2 shares nearly identical structural features with DLK, suggesting that it may function in a similar way. Like DLK, DLK2 affects adipogenesis of 3T3-L1 preadipocytes and mesenchymal C3H10T1/2 cells, yet it does so in an opposite way to that of DLK. Also, expression of DLK and DLK2 are inversely correlated and changes in expression of one gene will affect the expression levels of the other. Therefore, it is likely that adipogenesis is modulated by the coordinated expression of DLK and DLK2. There are two isoforms of DLK2 that are produced as a result of alternative splicing events.

REFERENCES

1. Garcés, C., et al. 1999. Adipocyte differentiation is modulated by secreted δ -like (dlk) variants and requires the expression of membrane-associated dlk. *Differentiation* 64: 103-114.
2. Cowherd, R.M., et al. 1999. Molecular regulation of adipocyte differentiation. *Semin. Cell Dev. Biol.* 10: 3-10.
3. Ntambi, J.M., et al. 2000. Adipocyte differentiation and gene expression. *J. Nutr.* 130: 3122S-3126S.
4. Nueda, M.L., et al. 2007. The novel gene EGFL9/Dlk2, highly homologous to Dlk1, functions as a modulator of adipogenesis. *J. Mol. Biol.* 367: 1270-1280.
5. Nueda, M.L., et al. 2007. The EGF-like protein dlk1 inhibits notch signaling and potentiates adipogenesis of mesenchymal cells. *J. Mol. Biol.* 367: 1281-1293.
6. Nueda, M.L., et al. 2008. dlk1 specifically interacts with Insulin-like growth factor binding protein 1 to modulate adipogenesis of 3T3-L1 cells. *J. Mol. Biol.* 379: 428-442.
7. Sul, H.S. 2009. Minireview: Pref-1: role in adipogenesis and mesenchymal cell fate. *Mol. Endocrinol.* 23: 1717-1725.

CHROMOSOMAL LOCATION

Genetic locus: Dlk2 (mouse) mapping to 17 C.

PRODUCT

DLK2 siRNA (m) is a target-specific 19-25 nt siRNA 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 DLK2 shRNA Plasmid (m): sc-143055-SH and DLK2 shRNA (m) Lentiviral Particles: sc-143055-V as alternate gene silencing products.

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 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

DLK2 siRNA (m) is recommended for the inhibition of DLK2 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 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor DLK2 gene expression knockdown using RT-PCR Primer: DLK2 (m)-PR: sc-143055-PR (20 μ l). 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.