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SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

mail@szabo-scandic.com

www.szabo-scandic.com

[linkedin.com/company/szaboscandic](https://www.linkedin.com/company/szaboscandic) 

DLC-1 siRNA (h): sc-43725

BACKGROUND

Loss of expression of deleted in liver cancer 1 (DLC-1) protein correlates strongly with cancerous phenotype in a large number of human tissues, such as breast, liver, colon and prostate, and generally occurs due to genomic deletion or aberrant promoter methylation. The gene encoding DLC-1 maps to human chromosome 8p22, a region presumed to harbor tumor suppressor genes based on its frequent mutation in a large number of cancers. DLC-1 localizes to the cytoplasm and restored expression leads to caspase-3 mediated apoptosis, and inhibition of cell growth and invasiveness.

REFERENCES

1. Yuan, B.Z., et al. 1998. Cloning, characterization, and chromosomal localization of a gene frequently deleted in human liver cancer (DLC-1) homologous to rat RhoGAP. *Cancer Res.* 58: 2196-2199.
2. Park, S.W., et al. 2003. DNA variants of DLC-1, a candidate tumor suppressor gene in human hepatocellular carcinoma. *Int. J. Oncol.* 23: 133-137.
3. Yuan, B.Z., et al. 2003. DLC-1 gene inhibits human breast cancer cell growth and *in vivo* tumorigenicity. *Oncogene* 22: 445-450.
4. Zhou, X., et al. 2004. Restoration of DLC-1 gene expression induces apoptosis and inhibits both cell growth and tumorigenicity in human hepatocellular carcinoma cells. *Oncogene* 23: 1308-1313.
5. Yuan, B.Z., et al. 2004. DLC-1 operates as a tumor suppressor gene in human non-small cell lung carcinomas. *Oncogene* 23: 1405-1411.
6. Syed, V., et al. 2005. Identification of ATF-3, caveolin-1, DLC-1, and NM23-H2 as putative antitumorigenic, progesterone-regulated genes for ovarian cancer cells by gene profiling. *Oncogene* 24: 1774-1787.

CHROMOSOMAL LOCATION

Genetic locus: DLC1 (human) mapping to 8p22.

PRODUCT

DLC-1 siRNA (h) is a pool of 2 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 DLC-1 shRNA Plasmid (h): sc-43725-SH and DLC-1 shRNA (h) Lentiviral Particles: sc-43725-V as alternate gene silencing products.

For independent verification of DLC-1 (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-43725A and sc-43725B.

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

DLC-1 siRNA (h) is recommended for the inhibition of DLC-1 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

DLC-1 (C-12): sc-271915 is recommended as a control antibody for monitoring of DLC-1 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 DLC-1 gene expression knockdown using RT-PCR Primer: DLC-1 (h)-PR: sc-43725-PR (20 μ l, 449 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Shih, Y.P., et al. 2012. Silencing of DLC1 upregulates PAI-1 expression and reduces migration in normal prostate cells. *Mol. Cancer Res.* 10: 34-39.
2. Cao, X., et al. 2015. A phosphorylation switch controls the spatiotemporal activation of Rho GTPases in directional cell migration. *Nat. Commun.* 6: 7721.
3. Liu, Y., et al. 2017. Curcumin inhibits growth of human breast cancer cells through demethylation of DLC1 promoter. *Mol. Cell. Biochem.* 425: 47-58.

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.