SANTA CRUZ BIOTECHNOLOGY, INC.

DCC siRNA (h): sc-35183

BACKGROUND

DCC (deleted in colorectal cancer) was first identified as a candidate tumor suppressor gene based on its absence or reduced expression in the majority of colorectal cancers. Loss of DCC expression was subsequently observed in cancers of the breast, endometrium, brain, pancreas and prostate, as well as in leukemias, neuroblastomas and male germ cell cancers. DCC is a 1447 amino acid transmembrane protein with highest expression in developing brain and neural tube and is suspected to play a role in mediating directional migration in the developing nervous system. Netrin-1, a chemoattractant for commissural axons in the spinal cord, has been identified as a ligand for DCC.

REFERENCES

1. Vogelstein, B., et al. 1989. Allelotype of colorectal carcinomas. Science 244: 207-211.
2. Fearon, E.R., et al. 1990. Identification of a chromosome 18q gene that is altered in colorectal cancers. Science 247: 49-56.
3. Hedrick, L., et al. 1994. The DCC gene product in cellular differentiation and colorectal tumorigenesis. Genes Dev. 8: 1174-1183.
4. Reale, M.A., et al. 1994. Expression and alternative splicing of the deleted in colorectal cancer (DCC) gene in normal and malignant tissues. Cancer Res. 54: 4493-4501.
5. Cooper, H.M., et al. 1995. Cloning of the mouse homologue of the deleted in colorectal cancer gene (mDCC) and its expression in the developing mouse embryo. Oncogene 11: 2243-2254.
6. Keino-Masu, K., et al. 1996. Deleted in colorectal cancer (DCC) encodes a netrin receptor. Cell 87: 175-185.
7. Inokuchi, K., et al. 1996. DCC protein expression in hematopoietic cell populations and its relation to leukemogenesis. J. Clin. Invest. 97: 852-857.
8. Reyes-Mugica, M., et al. 1997. Loss of DCC expression and glioma progression. Cancer Res. 57: 382-386.
9. Rodrigues, S., et al. 2007. Opposing roles of netrin-1 and the dependence receptor DCC in cancer cell invasion, tumor growth and metastasis. Oncogene 26: 5615-5625.

CHROMOSOMAL LOCATION

Genetic locus: DCC (human) mapping to 18q21.2.

PRODUCT

DCC 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see DCC shRNA Plasmid (h): sc-35183-SH and DCC shRNA (h) Lentiviral Particles: sc-35183-V as alternate gene silencing products.

For independent verification of DCC (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-35183A, sc-35183B and sc-35183C.

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

DCC shRNA Plasmid (h) is recommended for the inhibition of DCC 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 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.

GENE EXPRESSION MONITORING

DCC (A-1): sc-515834 is recommended as a control antibody for monitoring of DCC 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 DCC gene expression knockdown using RT-PCR Primer: DCC (h)-PR: sc-35183-PR (20 µl, 569 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.