SANTA CRUZ BIOTECHNOLOGY, INC.

DCDC2 siRNA (h): sc-60505

BACKGROUND

The DCDC2 gene encodes the DCDC2 protein (Doublecortin-containing protein 2, RU2, RU2S) which contains two Doublecortin peptide domains similar to those in the Doublecortin gene. DCDC2 is transcribed as a "normal" gene, which results in a sense transcript (RU2S), but when it is transcribed in the opposite direction, a shorter antisense transcript (RU2AS), which is found in tumors, results. The DCDC2 protein demonstrates ubiquitous expression, whereas RU2AS expression is restricted to normal kidney, bladder, liver and testis, and to tumors of various histologic origins. The deduced DCDC2 protein contains 476 amino acids, while the RU2AS protein contains 84 residues. There is a significant association between dyslexia and several SNPs within the DCDC2 gene.

REFERENCES

1. Van Den Eynde, B.J., et al. 2000. A new antigen recognized by cytolytic T lymphocytes on a human kidney tumor results from reverse strand transcription. J. Exp. Med. 190: 1793-1800.
2. Cope, N., et al. 2005. Strong evidence that KIAA0319 on chromosome 6p is a susceptibility gene for developmental dyslexia. Am. J. Hum. Genet. 76: 581-591.
3. Schumacher, J., et al. 2005. Strong genetic evidence of DCDC2 as a susceptibility gene for dyslexia. Am. J. Hum. Genet. 78: 52-62.
4. Meng, H., et al. 2005. From The cover: DCDC2 is associated with reading disability and modulates neuronal development in the brain. Proc. Natl. Acad. Sci. USA 102: 17053-17058.
5. McGrath, L.M., et al. 2006. Breakthroughs in the search for dyslexia candidate genes. Trends Mol. Med. 12: 333-341.

CHROMOSOMAL LOCATION

Genetic locus: DCDC2 (human) mapping to 6p22.3.

PRODUCT

DCDC2 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 DCDC2 shRNA Plasmid (h): sc-60505-SH and DCDC2 shRNA (h) Lentiviral Particles: sc-60505-V as alternate gene silencing products.

For independent verification of DCDC2 (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-60505A, sc-60505B and sc-60505C.

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.

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

DCDC2 siRNA (h) is recommended for the inhibition of DCDC2 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

DCDC2 (B-5): sc-398248 is recommended as a control antibody for monitoring of DCDC2 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 DCDC2 gene expression knockdown using RT-PCR Primer: DCDC2 (h)-PR: sc-60505-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.