SANTA CRUZ BIOTECHNOLOGY, INC.

DSCAM siRNA (h): sc-77182

BACKGROUND

DSCAM (Down syndrome cell adhesion molecule) is a cell adhesion molecule belonging to the immunoglobulin superfamily. It is predominantly expressed in brain and contains six Fibronectin type-III domains and ten Ig-like C2-type domains. In mice, DSCAM is responsible for regulating isoneuronal self-avoidance, the tendency for sister arbors to avoid crossing each other and to spread out proportionately over an area. Isoneuronal self-avoidance is important for proper terminal branching (arborization). In some cell types, DSCAM also mediates heteroneuronal self-avoidance, which is important for the regular spacing of cell bodies and the prevention of hyperfasciculation. In humans, two DSCAM isoforms exist due to alternative splicing. The long isoform (also known as CHD2-42) is a single pass type I membrane protein, while the short isoform (CHD2-52), which lacks the C-terminal transmembrane containing region (amino acids 1572-2012), is secreted.

REFERENCES

1. Yamakawa, K., et al. 1998. DSCAM: a novel member of the immunoglobulin superfamily maps in a Down syndrome region and is involved in the development of the nervous system. Hum. Mol. Genet. 7: 227-237.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 602523. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Yamashima, T., et al. 2006. Implication of "Down syndrome cell adhesion molecule" in the hippocampal neurogenesis of ischemic monkeys. Hippocampus 16: 924-935.
4. Kurtz, J. and Armitage, S.A. 2006. Alternative adaptive immunity in invertebrates. Trends Immunol. 27: 493-496.
5. Zipursky, S.L., et al. 2006. Got diversity? Wiring the fly brain with DSCAM. Trends Biochem. Sci. 31: 581-588.
6. Ronan, A., et al. 2007. Familial 4.3 Mb duplication of 21q22 sheds new light on the Down syndrome critical region. J. Med. Genet. 44: 448-451.

CHROMOSOMAL LOCATION

Genetic locus: DSCAM (human) mapping to 21q22.2.

PRODUCT

DSCAM 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 DSCAM shRNA Plasmid (h): sc-77182-SH and DSCAM shRNA (h) Lentiviral Particles: sc-77182-V as alternate gene silencing products.

For independent verification of DSCAM (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-77182A, sc-77182B and sc-77182C.

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

DSCAM siRNA (h) is recommended for the inhibition of DSCAM 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor DSCAM gene expression knockdown using RT-PCR Primer: DSCAM (h)-PR: sc-77182-PR (20 µl). 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.