SANTA CRUZ BIOTECHNOLOGY, INC.

DSCR 3 siRNA (m): sc-77187

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The Power to Question

BACKGROUND

An extra copy of chromosome 21, the smallest human autosome chromosome, results in Down syndrome. Down syndrome is a genetic disorder characterized by congenital heart abnormalities and mental retardation. The Down Syndrome Critical Region (DSCR) maps specifically to chromosome 21q22.2 and includes several genes which are likely associated with the pathogenesis of Down syndrome. Symptoms include abnormal neuronal differentiation and elevated apoptosis in the developing brain. DSCR 3 (Down syndrome critical region protein 3), also known as DCRA or DSCRA, is a ubiquitously expressed 297 amino acid protein. In addition to its location in the DSCR region of chromosome 21, DSCR 3 is located within the CBR-ERG region that has been associated with partial trisomy 21 patients. This region contributes to the characteristic morphological features, mental retardation and hypotonia of Down syndrome patients.

REFERENCES

1. Nakamura, A., et al. 1998. Isolation of a novel human gene from the Down syndrome critical region of chromosome 21q22.2. J. Biochem. 122: 872-877.
2. Dahmane, N., et al. 1998. Transcriptional map of the 2.5-Mb CBR-ERG region of chromosome 21 involved in Down syndrome. Genomics 48: 12-23.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 605298. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Hu, Y., et al. 2004. Quantitative real-time PCR technique for rapid prenatal diagnosis of Down syndrome. Prenat. Diagn. 24: 704-707.
5. Zheng, M.M., et al. 2005. Application of real-time fluorescence quantitative polymerase chain reaction techniques for prenatal diagnosis of Down syndrome. Zhonghua Fu Chan Ke Za Zhi 39: 678-681.
6. Shin, J.H., et al. 2006. Protein dysregulation in mouse hippocampus polytransgenic for chromosome 21 structures in the Down Syndrome Critical Region. J. Proteome Res. 5: 44-53.
7. Pellegrini-Calace, M. and Tramontano, A. 2006. Identification of a novel putative mitogen-activated kinase cascade on human chromosome 21 by computational approaches. Bioinformatics 22: 775-778.
8. Gao, B., et al. 2007. Rapid diagnosis of Down's syndrome by multiplex real-time fluorescence relative quantitative PCR. Yi Chuan 29: 934-938.
9. Shin, J.H., et al. 2007. Dysregulation of growth factor receptor-bound protein 2 and fascin in hippocampus of mice polytransgenic for chromosome 21 structures. Hippocampus 17: 1180-1192.

CHROMOSOMAL LOCATION

Genetic locus: Dscr3 (mouse) mapping to 16 C4.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

PRODUCT

DSCR 3 siRNA (m) 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 DSCR 3 shRNA Plasmid (m): sc-77187-SH and DSCR 3 shRNA (m) Lentiviral Particles: sc-77187-V as alternate gene silencing products.

For independent verification of DSCR 3 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-77187A, sc-77187B and sc-77187C.

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

DSCR 3 siRNA (m) is recommended for the inhibition of DSCR 3 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 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 DSCR 3 gene expression knockdown using RT-PCR Primer: DSCR 3 (m)-PR: sc-77187-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.