SANTA CRUZ BIOTECHNOLOGY, INC.

DSCR 5 siRNA (h): sc-40497

BACKGROUND

An extra copy of the smallest human autosome chromosome 21 results in Down syndrome. The Down Syndrome Critical Region (DSCR) maps specifically to chromosme 21q22.2 and includes several genes which are likely associated with the pathogenesis of Down syndrome. The genes DSCR4, DSCR5 and DSCR6 differ in tissue expression and size. The gene DSCR4 encodes a large open reading frame of 118 amino acid residues with a unique sequence. Expression of DSCR4 mRNA occurs in the placenta as well as in adult cardiac and skeletal muscle. There are several splice variants of DSCR5 and the mRNA of DSCR5 is expressed in fetal liver and adult testis. Alternative splicing in DSCR6 leads to four transcripts labeled DSCR6a, DSCR6b, DSCR6c, and DSCR6d. The DSCR6 gene is the most centromeric gene, and its mRNA is expressed in the brain and kidney. Other genes in the DSCR family include tetratricopeptide repeat domain 3 (TTC3) and DSCR3.

REFERENCES

1. Tsukahara, F., et al. 1996. Identification and cloning of a novel cDNA belonging to tetratricopeptide repeat gene family from Down syndrome-critical region 21q22.2. J. Biochem. 120: 820-827.
2. Ohira, M., et al. 1996. Identification of a novel human gene containing the tetratricopeptide repeat domain from the Down syndrome region of chromosome 21. DNA Res. 29: 9-16.
3. Nakamura, A., et al. 1997. Isolation of a novel human gene from the Down syndrome critical region of chromosome 21q22.2. J. Biochem. 122: 872-877.
4. Nakamura, A., et al. 1997. A novel gene isolated from human placenta located in Down syndrome critical region on chromosome 21. DNA Res. 4: 321-334.
5. Hattori, M., et al. 2000. The DNA sequence of human chromosome 21. The chromosome 21 mapping and sequencing consortium. Nature 405: 311-339.
6. Togashi, T., et al. 2000. A novel gene, DSCR5, from the distal Down syndrome critical region on chromosome 21q22.2. DNA Res. 7: 207-212.

CHROMOSOMAL LOCATION

Genetic locus: PIGP (human) mapping to 21q22.13.

PRODUCT

DSCR 5 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 DSCR 5 shRNA Plasmid (h): sc-40497-SH and DSCR 5 shRNA (h) Lentiviral Particles: sc-40497-V as alternate gene silencing products.

For independent verification of DSCR 5 (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-40497A, sc-40497B and sc-40497C.

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 5 siRNA (h) is recommended for the inhibition of DSCR 5 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 DSCR 5 gene expression knockdown using RT-PCR Primer: DSCR 5 (h)-PR: sc-40497-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.

PROTOCOLS

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