SANTA CRUZ BIOTECHNOLOGY, INC.

DGCR6 siRNA (h): sc-62208

BACKGROUND

Neural crest cell migration to the third and fourth pharyngeal pouches is a critical step in the structural formation of organs that are affected in DiGeorge syndrome. DGCR6 (DiGeorge syndrome critical region 6) is a nuclear protein that plays a role in neural crest cell migration and is located at the DiGeorge syndrome critical region (DGCR) on chromosome 22. Expressed ubiquitously with highest levels in heart, liver and skeletal muscle, DGCR6 shares high homology with the *Drosophila* gonadal (gdl) protein and with human Laminin γ-1, both of which are involved in early tissue development. The gene encoding DGCR6, along with other DGCR genes, is deleted in DiGeorge syndrome; a developmental disorder characterized by improper facial, cardiac and palate formation. Upregulation of DGCR6 is implicated in lung and colon adenocarcinomas, as well as in Burkitt's lymphoma and lymphocytes transformed by EBV. Due to a duplication of the ancestral DGCR6 locus, there are two functional, highly homologous copies of the DGCR6 gene (designated DGCR6 and DGCR6L) on chromosome 22.

REFERENCES

1. Lindsay, E.A. and Baldini, A. 1998. A mouse gene (Dgcr6) related to the *Drosophila* gonadal gene is expressed in early embryogenesis and is the homolog of a human gene deleted in DiGeorge syndrome. Cytogenet. Cell Genet. 79: 243-247.
2. Edelmann, L., et al. 2001. Two functional copies of the DGCR6 gene are present on human chromosome 22q11 due to a duplication of an ancestral locus. Genome Res. 11: 208-217.
3. Liu, H., et al. 2002. Genetic variation at the 22q11 PRODH2/DGCR6 locus presents an unusual pattern and increases susceptibility to schizophrenia. Proc. Natl. Acad. Sci. USA 99: 3717-3722.
4. Chakravarti, A. 2002. A compelling genetic hypothesis for a complex disease: PRODH2/DGCR6 variation leads to schizophrenia susceptibility. Proc. Natl. Acad. Sci. USA 99: 4755-4756.
5. Hierck, B.P., et al. 2004. A chicken model for DGCR6 as a modifier gene in the DiGeorge critical region. Pediatr. Res. 56: 440-448.
6. Pfuhl, T., et al. 2005. Biochemical characterisation of the proteins encoded by the DiGeorge critical region 6 (DGCR6) genes. Hum. Genet. 117: 70-80.

CHROMOSOMAL LOCATION

Genetic locus: DGCR6 (human) mapping to 22q11.21.

PRODUCT

DGCR6 siRNA (h) is a target-specific 19-25 nt siRNA 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 DGCR6 shRNA Plasmid (h): sc-62208-SH and DGCR6 shRNA (h) Lentiviral Particles: sc-62208-V as alternate gene silencing products.

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

DGCR6 siRNA (h) is recommended for the inhibition of DGCR6 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 DGCR6 gene expression knockdown using RT-PCR Primer: DGCR6 (h)-PR: sc-62208-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.