SANTA CRUZ BIOTECHNOLOGY, INC.

Dopey-2 siRNA (h): sc-91467

BACKGROUND

Dopey-2, also known as C21orf5, is a 2,298 amino acid protein that is ubiquitously expressed with high levels found in the developing central nervous system where it is thought to play a role in protein trafficking between early endosomes and the late Golgi. Multiple isoforms of Dopey-2 exist due to alternative splicing events. The gene encoding Dopey-2 maps to human chromosome 21 and may be involved in the pathogenesis of Down syndrome. The smallest of the human chromosomes, chromosome 21 comprises about 1.5% of the human genome and contains nearly 300 genes and 47 million base pairs. Down syndrome, also known as trisomy 21, is the disease most commonly associated with chromosome 21. Alzheimer's disease, Jervell and Lange-Nielsen syndromes, and amyotrophic lateral sclerosis are also associated with chromosome 21. Translocations are found to occur between chromosome 21 and 8, and chromosome 21 and 12, in certain leukemias.

REFERENCES

1. Nagase, T., et al. 1999. Prediction of the coding sequences of unidentified human genes. XIII. The complete sequences of 100 new cDNA clones from brain which code for large proteins *in vitro*. DNA Res. 6: 63-70.
2. Guipponi, M., et al. 2000. C21orf5, a novel human chromosome 21 gene, has a *Caenorhabditis elegans* ortholog (pad-1) required for embryonic patterning. Genomics 68: 30-40.
3. Online Mendelian Inheritance in Man, OMIM™. 2000. Johns Hopkins University, Baltimore, MD. MIM Number: 604803. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Lopes, C., et al. 2003. The differentially expressed C21orf5 gene in the medial temporal-lobe system could play a role in mental retardation in Down syndrome and transgenic mice. Biochem. Biophys. Res. Commun. 305: 915-924.
5. Rachidi, M., et al. 2005. C21orf5, a new member of Dopey family involved in morphogenesis, could participate in neurological alterations and mental retardation in Down syndrome. DNA Res. 12: 203-210.

CHROMOSOMAL LOCATION

Genetic locus: DOPEY2 (human) mapping to 21q22.12.

PRODUCT

Dopey-2 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 Dopey-2 shRNA Plasmid (h): sc-91467-SH and Dopey-2 shRNA (h) Lentiviral Particles: sc-91467-V as alternate gene silencing products.

For independent verification of Dopey-2 (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-91467A, sc-91467B and sc-91467C.

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

Dopey-2 siRNA (h) is recommended for the inhibition of Dopey-2 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 Dopey-2 gene expression knockdown using RT-PCR Primer: Dopey-2 (h)-PR: sc-91467-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.