SANTA CRUZ BIOTECHNOLOGY, INC.

DC2 siRNA (h): sc-88880

BACKGROUND

DC2, also known as OSTC (oligosaccharyltransferase complex subunit) or hydrophobic protein HSF-28, is a 149 amino acid multi-pass membrane protein belonging to the OSTC family. Conserved in chimpanzee, canine, bovine, mouse, rat, chicken, zebrafish, fruit fly, mosquito, *Arabidopsis thaliana* and rice, DC2 is a component of the oligosaccharyltransferase (OST) complex and participates in dolichyl-diphosphooligosaccharide-protein glycotransferase activity. The gene that encodes DC2 maps to human chromosome 4q25. Representing approximately 6% of the human genome, chromosome 4 contains nearly 900 genes. Huntington's disease, thanatophoric dwarfism, achondroplasia, Muenke syndrome, bladder cancer, Ellis-van Creveld syndrome, methylmalonic acidemia and polycystic kidney disease are all associated with chromosome 4. Containing the largest gene deserts (genome regions without protein encoding genes), chromosome 4 exhibits one of the two lowest recombination frequencies of the human chromosomes.

REFERENCES

1. Shibatani, T., David, L.L., McCormack, A.L., Frueh, K. and Skach, W.R. 2005. Proteomic analysis of mammalian oligosaccharyltransferase reveals multiple subcomplexes that contain Sec61, TRAP, and two potential new subunits. Biochemistry 44: 5982-5992.
2. Hillier, L.W., Graves, T.A., Fulton, R.S., Fulton, L.A., Pepin, K.H., Minx, P., Wagner-McPherson, C., Layman, D., Wylie, K., Sekhon, M., Becker, M.C., Fewell, G.A., Delehaunty, K.D., Miner, T.L., Nash, W.E., Kremitzki, C., et al. 2005. Generation and annotation of the DNA sequences of human chromosomes 2 and 4. Nature 434: 724-731.
3. Cowan, C.M. and Raymond, L.A. 2006. Selective neuronal degeneration in Huntington's disease. Curr. Top. Dev. Biol. 75: 25-71.
4. Chavan, M. and Lennarz, W. 2006. The molecular basis of coupling of translocation and N-glycosylation. Trends Biochem. Sci. 31: 17-20.
5. Versteegh, F.G., Buma, S.A., Costin, G., de Jong, W.C. and Hennekam, R.C. For the EvC Working Party. 2007. Growth hormone analysis and treatment in Ellis-van Creveld syndrome. Am. J. Med. Genet. A 143A: 2113-2121.
6. Doherty, E.S., Lacbawan, F., Hadley, D.W., Brewer, C., Zalewski, C., Kim, H.J., Solomon, B., Rosenbaum, K., Domingo, D.L., Hart, T.C., Brooks, B.P., Immken, L., Lowry, R.B., Kimonis, V., Shanske, A.L., et al. 2007. Muenke syndrome (FGFR-3-related craniosynostosis): expansion of the phenotype and review of the literature. Am. J. Med. Genet. A 143A: 3204-3215.
7. Stack, E.C., Dedeoglu, A., Smith, K.M., Cormier, K., Kubilus, J.K., Bogdanov, M., Matson, W.R., Yang, L., Jenkins, B.G., Luthi-Carter, R., Kowall, N.W., Hersch, S.M., Beal, M.F. and Ferrante, R.J. 2007. Neuroprotective effects of synaptic modulation in Huntington's disease R6/2 mice. J. Neurosci. 27: 12908-12915.

CHROMOSOMAL LOCATION

Genetic locus: OSTC (human) mapping to 4q25.

PROTOCOLS

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

PRODUCT

DC2 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 DC2 shRNA Plasmid (h): sc-88880-SH and DC2 shRNA (h) Lentiviral Particles: sc-88880-V as alternate gene silencing products.

For independent verification of DC2 (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-88880A, sc-88880B and sc-88880C.

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

DC2 siRNA (h) is recommended for the inhibition of DC2 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 DC2 gene expression knockdown using RT-PCR Primer: DC2 (h)-PR: sc-88880-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.