SANTA CRUZ BIOTECHNOLOGY, INC.

DOC4 siRNA (m): sc-40495

BACKGROUND

DOC4 is a mammalian ortholog of a *Drosophila* gene, Tenm/Odz, which is implicated in the patterning of the early fly embryo. DOC4, for downstream of CHOP, is induced in response to stress and participates in CHOP/GADD153 signaling pathway. DOC4 is a secreted protein that is expressed at high levels in certain cell types, while CHOP is a small nuclear protein that dimerizes avidly with members of the C/EBP family of transcription factor and is also induced in response to stress. The N-terminus peptide sequence of DOC4 is identical to a novel portion of heregulin, which is in fact formed from a rare gene chromosomal translocation event between DOC4 and the heregulin gene HGL. DOC4 (also designated Odz4) and several other mammalian homologs of *Drosophila* Tenm/Odz, mouse Odz3 and Odz2, all contain a putative signal peptide, eight EGF-like repeats, and a putative transmembrane domain followed by a 1,800 amino acid stretch having unique sequence patterns from other proteins outside this family. The mouse genes Odz3 and DOC4/Odz4 exhibit partially overlapping, but clearly distinct, embryonic expression patterns, and Odz2 is predominantly expressed in the nervous system.

REFERENCES

1. Otaki, J.M., et al. 1999. Neurestin: putative transmembrane molecule implicated in neuronal development. Dev. Biol. 212: 165-181.
2. Wang, X.Z., et al. 1998. Identification of novel stress-induced genes downstream of chop. EMBO J. 17: 3619-3630.
3. Ben-Zur, T., et al. 1999. Mapping homologs of *Drosophila* odd Oz (odz): Doc4/Odz4 to mouse chromosome 7, Odz1 to mouse chromosome 11; and ODZ3 to human chromosome Xq25. Genomics 58: 102-103.
4. Wang, X.Z., et al. 1999. Gamma-heregulin is the product of a chromosomal translocation fusing the DOC4 and HGL/NRG1 genes in the MDA-MB-175 breast cancer cell line. Oncogene 18: 5718-5721.
5. Oohashi, T., et al. 1999. Mouse Tenm/Odz is a new family of dimeric type II transmembrane proteins expressed in many tissues. J. Cell Biol. 145: 563-577.

CHROMOSOMAL LOCATION

Genetic locus: Odz4 (mouse) mapping to 7 E1.

PRODUCT

DOC4 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 DOC4 shRNA Plasmid (m): sc-40495-SH and DOC4 shRNA (m) Lentiviral Particles: sc-40495-V as alternate gene silencing products.

For independent verification of DOC4 (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-40495A, sc-40495B and sc-40495C.

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

DOC4 siRNA (m) is recommended for the inhibition of DOC4 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 DOC4 gene expression knockdown using RT-PCR Primer: DOC4 (m)-PR: sc-40495-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.