SANTA CRUZ BIOTECHNOLOGY, INC.

DSS1 siRNA (h): sc-40502

BACKGROUND

The development of the heterogeneous limb disorder known as split hand/split foot malformation (SHFM), which is characterized by missing digits and fusions of the remaining digits, is the result of aberrations in the DSS1 gene. DSS1, for deleted in split hand/split foot malformation, is implicated in the formation of limb bud, craniofacial primordial, and skin, where it contributes to the differentiation of new cellular structures and membrane trafficking during the early developmental stages. DSS1 is a highly acidic protein consisting of 70 amino acids, and it shares no significant sequence similarities to any members of other known protein families yet shares 100% sequence identity with its murine homolog. As an integral protein in the cell cycle completion, DSS1 may also be an important indicator for the predisposition of early onset breast cancer, as it associates with the tumor suppressor protein BRCA2 in MCF7 cells.

REFERENCES

1. Crackower, M.A., et al. 1996. Characterization of the split hand/split foot malformation locus SHFM1 at 7q21.3-q22.1 and analysis of a candidate gene for its expression during limb development. Hum. Mol. Genet. 5: 571-579.
2. Ignatius, J., et al. 1996. Split hand/split foot malformation, deafness, and mental retardation with a complex cytogenetic rearrangement involving 7q21.3. J. Med. Genet. 33: 507-510.
3. Crackower, M.A., et al. 1997. Fluorescent *in situ* mapping of the murine deleted in split hand/split foot 1 (DSS1) gene to chromosome 6. Mamm. Genome 8: 704.
4. Ozen, R.S., et al. 1999. Fine mapping of the split-hand/split-foot locus (SHFM3) at 10q24: evidence for anticipation and segregation distortion. Am. J. Hum. Genet. 64: 1646-1654.
5. Jantti, J., et al. 1999. SEM1, a homologue of the split hand/split foot malformation candidate gene DSS1, regulates exocytosis and pseudohyphal differentiation in yeast. Proc. Natl. Acad. Sci. USA 96: 909-914.
6. Marston, N.J., et al. 1999. Interaction between the product of the breast cancer susceptibility gene BRCA2 and DSS1, a protein functionally conserved from yeast to mammals. Mol. Cell. Biol. 19: 4633-4642.

CHROMOSOMAL LOCATION

Genetic locus: SHFM1 (human) mapping to 7q21.3.

PRODUCT

DSS1 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 DSS1 shRNA Plasmid (h): sc-40502-SH and DSS1 shRNA (h) Lentiviral Particles: sc-40502-V as alternate gene silencing products.

For independent verification of DSS1 (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-40502A, sc-40502B and sc-40502C.

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

DSS1 siRNA (h) is recommended for the inhibition of DSS1 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 DSS1 gene expression knockdown using RT-PCR Primer: DSS1 (h)-PR: sc-40502-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.