SANTA CRUZ BIOTECHNOLOGY, INC.

DDX1 siRNA (h): sc-60517

BACKGROUND

DEAD box proteins, characterized by the conserved motif Asp-Glu-Ala-Asp, are putative RNA helicases implicated in several cellular processes involving modifications of RNA secondary structure such as translation initiation, nuclear and mitochondrial splicing, and ribosome and spliceosome assembly. Based on their distribution patterns, some members of this family may be involved in embryogenesis, spermatogenesis and cellular growth and division. DDX1 mRNA has a widespread distribution in human fetal tissue, but is not uniformly expressed in all tissues. Chicken DDX1, which shares 93% identity with human DDX1, shows highest levels of expression during the early stages of development. Tissue maturation typically correlates with a decrease in DDX1 expression, although DDX1 levels remain elevated in late embryonic retina and brain.

REFERENCES

1. Bleoo, S., et al. 2001. Association of human DEAD box protein DDX1 with a cleavage stimulation factor involved in 3'-end processing of pre-MRNA. Mol. Biol. Cell 12: 3046-3059.
2. Chen, H.C., et al. 2002. An RNA helicase, DDX1, interacting with poly(A) RNA and heterogeneous nuclear ribonucleoprotein K. J. Biol. Chem. 277: 40403-40409.
3. De Preter, K., et al. 2002. Quantification of MycN, DDX1 and NAG gene copy number in neuroblastoma using a real-time quantitative PCR assay. Mod. Pathol. 15: 159-166.
4. Godbout, R., et al. 2002. Cloning and expression analysis of the chicken DEAD box gene DDX1. Biochim. Biophys. Acta 1574: 63-71.
5. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 601257. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. Krishnan, V. and Zeichner, S.L. 2004. Alterations in the expression of DEAD-box and other RNA binding proteins during HIV-1 replication. Retrovirology 1: 42.
7. De Preter, K., et al. 2005. No evidence for correlation of DDX1 gene amplification with improved survival probability in patients with MycN-amplified neuroblastomas. J. Clin. Oncol. 23: 3167-3168.

CHROMOSOMAL LOCATION

Genetic locus: DDX1 (human) mapping to 2p24.3.

PRODUCT

DDX1 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 DDX1 shRNA Plasmid (h): sc-60517-SH and DDX1 shRNA (h) Lentiviral Particles: sc-60517-V as alternate gene silencing products.

For independent verification of DDX1 (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-60517A, sc-60517B and sc-60517C.

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

DDX1 siRNA (h) is recommended for the inhibition of DDX1 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.

GENE EXPRESSION MONITORING

DDX1 (A-7): sc-271438 is recommended as a control antibody for monitoring of DDX1 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor DDX1 gene expression knockdown using RT-PCR Primer: DDX1 (h)-PR: sc-60517-PR (20 µl, 589 bp). 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.