SANTA CRUZ BIOTECHNOLOGY, INC.

DDX51 siRNA (m): sc-142943

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. DEAD box protein 51 (DDX51), also known as ATP-dependent RNA helicase DDX51, is a 666 amino acid protein belonging to the DEAD box helicase family. Localized to the nucleus, DDX51 serves as an ATP-binding RNA helicase involved in the biogenesis of 60S ribosomal subunits. DDX51 contains one helicase ATP-binding domain and one helicase C-terminal domain.

REFERENCES

1. Silverman, E., et al. 2003. DExD/H-box proteins and their partners: helping RNA helicases unwind. Gene 312: 1-16.
2. Yang, Q., et al. 2005. ATP- and ADP-dependent modulation of RNA unwinding and strand annealing activities by the DEAD-box protein DED1. Biochemistry 44: 13591-13601.
3. Cordin, O., et al. 2006. The DEAD-box protein family of RNA helicases. Gene 367: 17-37.
4. Tuteja, R., et al. 2006. Unraveling the "DEAD-box" helicases of *Plasmodium falciparum*. Gene 376: 1-12.
5. Yang, Q., et al. 2006. The DEAD-box protein Ded1 unwinds RNA duplexes by a mode distinct from translocating helicases. Nat. Struct. Mol. Biol. 13: 981-986.
6. Taylor, K.H., et al. 2007. Large-scale CpG methylation analysis identifies novel candidate genes and reveals methylation hotspots in acute lymphoblastic leukemia. Cancer Res. 67: 2617-2625.
7. Yang, Q., et al. 2007. DEAD-box proteins unwind duplexes by local strand separation. Mol. Cell 28: 253-263.

CHROMOSOMAL LOCATION

Genetic locus: Ddx51 (mouse) mapping to 5 F.

PRODUCT

DDX51 siRNA (m) is a target-specific 19-25 nt siRNA 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 DDX51 shRNA Plasmid (m): sc-142943-SH and DDX51 shRNA (m) Lentiviral Particles: sc-142943-V as alternate gene silencing products.

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.

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

DDX51 siRNA (m) is recommended for the inhibition of DDX51 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 DDX51 gene expression knockdown using RT-PCR Primer: DDX51 (m)-PR: sc-142943-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.