

# DDX51 siRNA (h): sc-95667

## 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

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2. Yang, Q. and Jankowsky, E. 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. and Pradhan, A. 2006. Unraveling the "DEAD-box" helicases of *Plasmodium falciparum*. *Gene* 376: 1-12.
5. Yang, Q. and Jankowsky, E. 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.
8. Chen, Y., et al. 2008. DEAD-box proteins can completely separate an RNA duplex using a single ATP. *Proc. Natl. Acad. Sci. USA* 105: 20203-20208.
9. Liu, F., et al. 2008. ATP hydrolysis is required for DEAD-box protein recycling but not for duplex unwinding. *Proc. Natl. Acad. Sci. USA* 105: 20209-20214.

## CHROMOSOMAL LOCATION

Genetic locus: DDX51 (human) mapping to 12q24.33.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.

## PRODUCT

DDX51 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see DDX51 shRNA Plasmid (h): sc-95667-SH and DDX51 shRNA (h) Lentiviral Particles: sc-95667-V as alternate gene silencing products.

For independent verification of DDX51 (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-95667A, sc-95667B and sc-95667C.

## 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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

DDX51 siRNA (h) is recommended for the inhibition of DDX51 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  $\mu$ M in 66  $\mu$ l. 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 (h)-PR: sc-95667-PR (20  $\mu$ l, 557 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.