



# DDX31 siRNA (m): sc-142931

## 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 and ribosome/spliceosome assembly. Based on their distribution patterns, some members of this family may be involved in embryogenesis, spermatogenesis and cellular growth and division. DDX31 (DEAD-box protein 31), also known as Helicain, is an 851 amino acid protein that contains one helicase ATP-binding domain and one helicase C-terminal domain. Localized to the nucleus, DDX31 is thought to function as an ATP-dependent RNA helicase that is involved in pre-mRNA splicing events, possibly playing a role in cell cycle progression. Four isoforms of DDX31 exist due to alternative splicing events.

## REFERENCES

1. Gorbalenya, A.E., et al. 1989. Two related superfamilies of putative helicases involved in replication, recombination, repair and expression of DNA and RNA genomes. *Nucleic Acids Res.* 17: 4713-4730.
2. Tanner, N.K., et al. 2001. DExD/H box RNA helicases: from generic motors to specific dissociation functions. *Mol. Cell* 8: 251-262.
3. Caruthers, J.M., et al. 2002. Helicase structure and mechanism. *Curr. Opin. Struct. Biol.* 12: 123-133.
4. Scherl, A., et al. 2002. Functional proteomic analysis of human nucleolus. *Mol. Biol. Cell* 13: 4100-4109.
5. Abdelhaleem, M., et al. 2003. The human DDX and DHX gene families of putative RNA helicases. *Genomics* 81: 618-622.
6. Andersen, J.S., et al. 2005. Nucleolar proteome dynamics. *Nature* 433: 77-83.

## CHROMOSOMAL LOCATION

Genetic locus: Ddx31 (mouse) mapping to 2 A3.

## PRODUCT

DDX31 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see DDX31 shRNA Plasmid (m): sc-142931-SH and DDX31 shRNA (m) Lentiviral Particles: sc-142931-V as alternate gene silencing products.

For independent verification of DDX31 (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-142931A, sc-142931B and sc-142931C.

## 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.

## 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

DDX31 siRNA (m) is recommended for the inhibition of DDX31 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  $\mu$ 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 DDX31 gene expression knockdown using RT-PCR Primer: DDX31 (m)-PR: sc-142931-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.