SANTA CRUZ BIOTECHNOLOGY, INC.

DDX56 siRNA (m): sc-105281

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. DDX56 (DEAD box polypeptide 56), also known as DDX21 or NOH61, contains a helicase core region, a leucine zipper motif in its N-terminus, two putative C-terminal nuclear localization signals and several potential phosphorylation sites. DDX56 may be involved in ribosome synthesis, specifically during assembly of the large 60S ribosomal subunit.

REFERENCES

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2. Imamura, O., et al. 1997. Cloning and characterization of a putative human RNA helicase gene of the DEAH-box protein family. Biochem. Biophys. Res. Commun. 240: 335-340.
3. Eisen, A., et al. 1998. A novel DEAD-box RNA helicase exhibits high sequence conservation from yeast to humans. Biochim. Biophys. Acta 1397: 131-136.
4. Zirwes, R.F., et al. 2000. A novel helicase-type protein in the nucleolus: protein NOH61. Mol. Biol. Cell 11: 1153-1167.
5. Online Mendelian Inheritance in Man, OMIM™. 2003. Johns Hopkins University, Baltimore, MD. MIM Number: 608023. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. Zhang, D.Y., et al. 2006. Molecular cloning and characterization of a putative nuclear DEAD box RNA helicase in the spruce budworm, *Choristoneura fumiferana*. Arch. Insect Biochem. Physiol. 61: 209-219.
7. Jain, C. 2008. The *E. coli* RhlE RNA helicase regulates the function of related RNA helicases during ribosome assembly. RNA 14: 381-389.
8. Theissen, B., et al. 2008. Cooperative binding of ATP and RNA induces a closed conformation in a DEAD box RNA helicase. Proc. Natl. Acad. Sci. USA 105: 548-553.

CHROMOSOMAL LOCATION

Genetic locus: Ddx56 (mouse) mapping to 11 A1.

PRODUCT

DDX56 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see DDX56 shRNA Plasmid (m): sc-105281-SH and DDX56 shRNA (m) Lentiviral Particles: sc-105281-V as alternate gene silencing products.

For independent verification of DDX56 (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-105281A, sc-105281B and sc-105281C.

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

DDX56 siRNA (m) is recommended for the inhibition of DDX56 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.

GENE EXPRESSION MONITORING

DDX56 (F-5): sc-393078 is recommended as a control antibody for monitoring of DDX56 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 DDX56 gene expression knockdown using RT-PCR Primer: DDX56 (m)-PR: sc-105281-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.