

DDX39 siRNA (h): sc-77111

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. DDX39 (DEAD box protein 39), also known as URH49, is a 427 amino acid protein that belongs to the DEAD-box family and contains one helicase C-terminal domain and one helicase ATP-binding domain. Localized to the nucleus and expressed in lung, brain, kidney, spleen, thymus and salivary gland, DDX39 is involved in pre-mRNA splicing and is required for mRNA export out of the nucleus. DDX39 expression is upregulated in lung squamous cell carcinoma, suggesting a role for DDX39 in tumorigenesis.

REFERENCES

- Andersen, J.S., et al. 2002. Directed proteomic analysis of the human nucleolus. *Curr. Biol.* 12: 1-11.
- Strässer, K., et al. 2002. TREX is a conserved complex coupling transcription with messenger RNA export. *Nature* 417: 304-308.
- Pryor, A., et al. 2004. Growth-regulated expression and G₀-specific turnover of the mRNA that encodes URH49, a mammalian DEXH/D box protein that is highly related to the mRNA export protein UAP56. *Nucleic Acids Res.* 32: 1857-1865.
- Kapadia, F., et al. 2006. Nuclear localization of poly(A)⁺ mRNA following siRNA reduction of expression of the mammalian RNA helicases UAP56 and URH49. *Gene* 384: 37-44.

CHROMOSOMAL LOCATION

Genetic locus: DDX39 (human) mapping to 19p13.12.

PRODUCT

DDX39 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see DDX39 shRNA Plasmid (h): sc-77111-SH and DDX39 shRNA (h) Lentiviral Particles: sc-77111-V as alternate gene silencing products.

For independent verification of DDX39 (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-77111A, sc-77111B and sc-77111C.

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

APPLICATIONS

DDX39 siRNA (h) is recommended for the inhibition of DDX39 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 μ M in 66 μ 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.

GENE EXPRESSION MONITORING

BAT1/DDX39 (H-6): sc-271395 is recommended as a control antibody for monitoring of DDX39 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 DDX39 gene expression knockdown using RT-PCR Primer: DDX39 (h)-PR: sc-77111-PR (20 μ l, 585 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

- Saleem, I., et al. 2021. The mammalian ecdysoneless protein interacts with RNA helicase DDX39A to regulate nuclear mRNA export. *Mol. Cell. Biol.* E-published.

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.