

DDX11 siRNA (m): sc-77105

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. DDX11 (DEAD/H box protein 11), also known as CHLR1 or KRG2, is a member of the DEAD-box protein family and possesses both ATPase and DNA Helicase activity. A homolog of the *S. cerevisiae* CHL1 protein, DDX11 is localized to the nucleus and is highly expressed in the testis, thymus, ovary, spleen and pancreas. DDX11 can bind to both single- and double-stranded DNA and is essential for proper chromosome segregation and embryonic development. Five isoforms of DDX11 exist due to alternative splicing events.

REFERENCES

1. Frank, S. and Werner, S. 1996. The human homologue of the yeast CHL1 gene is a novel keratinocyte growth factor-regulated gene. *J. Biol. Chem.* 271: 24337-24340.
2. Amann, J., et al. 1997. Localization of chi1-related helicase genes to human chromosome regions 12p11 and 12p13: similarity between parts of these genes and conserved human telomeric-associated DNA. *Genomics* 32: 260-265.
3. Amann, J., et al. 1997. Characterization of putative human homologues of the yeast chromosome transmission fidelity gene, CHL1. *J. Biol. Chem.* 272: 3823-3832.
4. Hirota, Y. and Lahti, J.M. 2000. Characterization of the enzymatic activity of hChR1, a novel human DNA helicase. *Nucleic Acids Res.* 28: 917-924.
5. Genini, S., et al. 2006. Radiation hybrid mapping of 18 positional and physiological candidate genes for arthrogryposis multiplex congenita on porcine chromosome 5. *Anim. Genet.* 37: 239-244.
6. Sjöblom, T., et al. 2006. The consensus coding sequences of human breast and colorectal cancers. *Science* 314: 268-274.
7. Parish, J.L., et al. 2006. The DNA helicase ChR1 is required for sister chromatid cohesion in mammalian cells. *J. Cell Sci.* 119: 4857-4865.

CHROMOSOMAL LOCATION

Genetic locus: Ddx11 (mouse) mapping to 17 E1.1.

PRODUCT

DDX11 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see DDX11 shRNA Plasmid (m): sc-77105-SH and DDX11 shRNA (m) Lentiviral Particles: sc-77105-V as alternate gene silencing products.

For independent verification of DDX11 (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-77105A, sc-77105B and sc-77105C.

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

DDX11 siRNA (m) is recommended for the inhibition of DDX11 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 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

DDX11 (F-2): sc-271700 is recommended as a control antibody for monitoring of DDX11 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 DDX11 gene expression knockdown using RT-PCR Primer: DDX11 (m)-PR: sc-77105-PR (20 μ l). 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.