

DYDC1 siRNA (m): sc-143200

BACKGROUND

The Dumpy-30 (DPY-30) protein was first described in *C. elegans*, in which it is involved in dosage compensation of sex chromosomes. Conserved from yeast to humans, the DPY-30 family is involved in gene expression and chromatin modification, specifically histone methylation. DPY-30 and closely related proteins contain a short motif that is related to the dimerization motif in the regulatory subunit of protein kinase A (PKA), which consists of two α -helices that form a four-helix bundle during dimerization. As a member of the DPY-30 family, DYDC1 (DPY30 domain-containing protein 1), also known as DPY30D1 and RSD9, is a 177 amino acid protein that binds to Endophilin III and plays a crucial role during acrosome biogenesis. DYDC1 is specifically expressed in brain and testis and accumulates in the acrosome area during spermatogenesis. Knockdown of DYDC1 mRNA results in disruption of acrosome formation and spermatid differentiation.

REFERENCES

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2. Hsu, D.R., et al. 1995. DPY-30, a nuclear protein essential early in embryogenesis for *Caenorhabditis elegans* dosage compensation. *Development* 121: 3323-3334.
3. Lieb, J.D., et al. 2000. The *Caenorhabditis elegans* dosage compensation machinery is recruited to X chromosome DNA attached to an autosome. *Genetics* 156: 1603-1621.
4. Dong, X., et al. 2005. Characterization and crystallization of human DPY-30-like protein, an essential component of dosage compensation complex. *Biochim. Biophys. Acta* 1753: 257-262.
5. Vardanyan, A., et al. 2008. Dumpy-30 family members as determinants of male fertility and interaction partners of metal-responsive transcription factor 1 (MTF-1) in *Drosophila*. *BMC Dev. Biol.* 8: 68.
6. Kuhl, A., et al. 2008. Myofibrillar myopathy with arrhythmogenic right ventricular cardiomyopathy 7: corroboration and narrowing of the critical region on 10q22.3. *Eur. J. Hum. Genet.* 16: 367-373.
7. Li, S., et al. 2009. Interaction of SHP13 and DYDC1 protein: a germ cell component that regulates acrosome biogenesis during spermiogenesis. *Eur. J. Cell Biol.* 88: 509-520.
8. Patel, A., et al. 2009. On the mechanism of multiple lysine methylation by the human mixed lineage leukemia protein-1 (MLL1) core complex. *J. Biol. Chem.* 284: 24242-24256.
9. Wang, X., et al. 2009. Crystal structure of the C-terminal domain of human DPY-30-like protein: a component of the histone methyltransferase complex. *J. Mol. Biol.* 390: 530-537.

CHROMOSOMAL LOCATION

Genetic locus: Dydc1 (mouse) mapping to 14 B.

RESEARCH USE

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

PRODUCT

DYDC1 siRNA (m) is a target-specific 19-25 nt siRNA 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 DYDC1 shRNA Plasmid (m): sc-143200-SH and DYDC1 shRNA (m) Lentiviral Particles: sc-143200-V as alternate gene silencing 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 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

DYDC1 siRNA (m) is recommended for the inhibition of DYDC1 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor DYDC1 gene expression knockdown using RT-PCR Primer: DYDC1 (m)-PR: sc-143200-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.