



Dim2 siRNA (m): sc-143040

BACKGROUND

The Dim protein family consists of two classes, Dim1 and Dim2, which share a common thioredoxin-like fold, but most likely function in different biological pathways. Dim2, also known as TXNL4B (thioredoxin-like 4B), or DLP, is a 149 amino acid nuclear protein that exists as a homodimer and plays an essential role in pre-mRNA splicing. Evolutionarily related and sharing 38% sequence identity with Dim1, Dim2 is required for S/G₂ transition during the cell cycle and is able to bind the PRP6 (U5-102K) subunit of the spliceosome. The gene encoding Dim2 maps to human chromosome 16, which encodes over 900 genes and comprises nearly 3% of the human genome. The rare disorder Rubinstein-Taybi syndrome is associated with chromosome 16, as is Crohn's disease, which is a gastrointestinal inflammatory condition.

REFERENCES

- Baraitser, M. and Preece, M.A. 1983. The Rubinstein-Taybi syndrome: occurrence in two sets of identical twins. *Clin. Genet.* 23: 318-320.
- Zhang, Y.Z., Gould, K.L., Dunbrack RL, J.R., Cheng, H., Roder, H. and Golemis, E.A. 1999. The evolutionarily conserved Dim1 protein defines a novel branch of the thioredoxin fold superfamily. *Physiol. Genomics* 1: 109-118.
- Mathew, C.G. and Lewis, C.M. 2004. Genetics of inflammatory bowel disease: progress and prospects. *Hum. Mol. Genet.* 13: R161-R168.
- Sun, X., Zhang, H., Wang, D., Ma, D., Shen, Y. and Shang, Y. 2004. DLP, a novel Dim1 family protein implicated in pre-mRNA splicing and cell cycle progression. *J. Biol. Chem.* 279: 32839-32847.
- Jin, T., Howard, A.J., Golemis, E.A., Wang, Y. and Zhang, Y.Z. 2005. Overproduction, purification, crystallization and preliminary X-ray diffraction studies of the human spliceosomal protein TXNL4B. *Acta Crystallogr. Sect. F Struct. Biol. Cryst. Commun.* 61: 282-284.
- Simeoni, F., Arvai, A., Bello, P., Gondeau, C., Hopfner, K.P., Neyroz, P., Heitz, F., Tainer, J. and Divita, G. 2005. Biochemical characterization and crystal structure of a Dim1 family associated protein: Dim2. *Biochemistry* 44: 11997-12008.
- Simeoni, F. and Divita, G. 2007. The Dim protein family: from structure to splicing. *Cell. Mol. Life Sci.* 64: 2079-2089.

CHROMOSOMAL LOCATION

Genetic locus: Txnl4b (mouse) mapping to 8 D3.

PRODUCT

Dim2 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 Dim2 shRNA Plasmid (m): sc-143040-SH and Dim2 shRNA (m) Lentiviral Particles: sc-143040-V as alternate gene silencing products.

RESEARCH USE

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

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

Dim2 siRNA (m) is recommended for the inhibition of Dim2 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 Dim2 gene expression knockdown using RT-PCR Primer: Dim2 (m)-PR: sc-143040-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.