

# ZNF41 siRNA (h): sc-91018

## BACKGROUND

ZNF41 (zinc finger protein 41) is an 821 amino acid nuclear protein that exists as eight alternatively spliced isoforms and may be involved in transcriptional regulation. Belonging to the Krüppel C<sub>2</sub>H<sub>2</sub>-type zinc finger protein family, ZNF41 contains 18 C<sub>2</sub>H<sub>2</sub>-type zinc fingers and one KRAB domain. ZNF41 is expressed in heart, brain, placenta, lung, liver, skeletal muscle, kidney and pancreas. The gene that encodes ZNF41 consists of approximately 37,068 bases and maps to human chromosome Xp11.23. Defects in ZNF41 are the cause of mental retardation X-linked type 89 (MRX89). Mental retardation is characterized by significantly sub-average general intellectual functioning associated with impairments in adaptive behavior and manifested during the developmental period. Non-syndromic mental retardation patients do not manifest other clinical signs.

## REFERENCES

1. Miller, J., McLachlan, A.D. and Klug, A. 1985. Repetitive zinc-binding domains in the protein transcription factor IIIA from *Xenopus* oocytes. *EMBO J.* 4: 1609-1614.
2. Franzè, A., Archidiacono, N., Rocchi, M., Marino, M. and Grimaldi, G. 1991. Isolation and expression analysis of a human zinc finger gene (ZNF41) located on the short arm of the X chromosome. *Genomics* 9: 728-736.
3. Rosati, M., Marino, M., Franzè, A., Tramontano, A. and Grimaldi, G. 1991. Members of the zinc finger protein gene family sharing a conserved N-terminal module. *Nucleic Acids Res.* 19: 5661-5667.
4. Online Mendelian Inheritance in Man, OMIM<sup>™</sup>. 1991. Johns Hopkins University, Baltimore, MD. MIM Number: 314995. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
5. Knight, J.C., Grimaldi, G., Thiesen, H.J., Bech-Hansen, N.T., Fletcher, C.D. and Coleman, M.P. 1994. Clustered organization of Krüppel zinc-finger genes at Xp11.23, flanking a translocation breakpoint at OATL1: a physical map with locus assignments for ZNF21, ZNF41, ZNF81, and ELK1. *Genomics* 21: 180-187.
6. Rosati, M., Franze, A., Matarazzo, M.R. and Grimaldi, G. 1999. Coding region intron/exon organization, alternative splicing, and X-chromosome inactivation of the KRAB/FPB-domain-containing human zinc finger gene ZNF41. *Cytogenet. Cell Genet.* 85: 291-296.
7. Shoichet, S.A., Hoffmann, K., Menzel, C., Trautmann, U., Moser, B., Hoeltzenbein, M., Echenne, B., Partington, M., Van Bokhoven, H., Moraine, C., Fryns, J.P., Chelly, J., Rott, H.D., Ropers, H.H. and Kalscheuer, V.M. 2003. Mutations in the ZNF41 gene are associated with cognitive deficits: identification of a new candidate for X-linked mental retardation. *Am. J. Hum. Genet.* 73: 1341-1354.

## CHROMOSOMAL LOCATION

Genetic locus: ZNF41 (human) mapping to Xp11.23.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.

## PRODUCT

ZNF41 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see ZNF41 shRNA Plasmid (h): sc-91018-SH and ZNF41 shRNA (h) Lentiviral Particles: sc-91018-V as alternate gene silencing products.

For independent verification of ZNF41 (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-91018A, sc-91018B and sc-91018C.

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

## APPLICATIONS

ZNF41 siRNA (h) is recommended for the inhibition of ZNF41 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  $\mu$ M in 66  $\mu$ 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 ZNF41 gene expression knockdown using RT-PCR Primer: ZNF41 (h)-PR: sc-91018-PR (20  $\mu$ 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.