

Mig12 siRNA (m): sc-149434

BACKGROUND

Mig12, also known as MID1IP1 (Mid1-interacting protein 1), gastrulation-specific G12-like protein or STRAIT11499, is a 183 amino acid nuclear and cytoplasmic protein that belongs to the SPOT14 family. Mig12 is thought to play a role in the stabilization of microtubules through interaction with Midline-1. The gene encoding Mig12 maps to human chromosome Xp11.4. Chromosome X consists of about 153 million base pairs and nearly 1,000 genes. The combination of a X and Y chromosome lead to normal male development while two copies of X lead to normal female development. There are a number of conditions related to an unusual number and combination of sex chromosomes being inherited, including Turner's syndrome, Klinefelter's syndrome and Triple X syndrome. Color blindness, hemophilia, and Duchenne muscular dystrophy are well known X chromosome-linked conditions which affect males more frequently as males carry a single X chromosome.

REFERENCES

1. Gianfrancesco, F., Sanges, R., Esposito, T., Tempesta, S., Rao, E., Rappold, G., Archidiacono, N., Graves, J.A., Forabosco, A. and D'Urso, M. 2001. Differential divergence of three human pseudoautosomal genes and their mouse homologs: implications for sex chromosome evolution. *Genome Res.* 11: 2095-2100.
2. Bernardino-Sgherri, J., Flagiello, D. and Dutrillaux, B. 2002. Overall DNA methylation and chromatin structure of normal and abnormal X chromosomes. *Cytogenet. Genome Res.* 99: 85-91.
3. Berti, C., Fontanella, B., Ferrentino, R. and Meroni, G. 2004. Mig12, a novel Opitz syndrome gene product partner, is expressed in the embryonic ventral midline and co-operates with Mid1 to bundle and stabilize microtubules. *BMC Cell Biol.* 5: 9.
4. Deeb, S.S. 2005. The molecular basis of variation in human color vision. *Clin. Genet.* 67: 369-377.
5. Bojesen, A., Kristensen, K., Birkebaek, N.H., Fedder, J., Mosekilde, L., Bennett, P., Laurberg, P., Frystyk, J., Flyvbjerg, A., Christiansen, J.S. and Gravholt, C.H. 2006. The metabolic syndrome is frequent in Klinefelter's syndrome and is associated with abdominal obesity and hypogonadism. *Diabetes Care* 29: 1591-1598.
6. Maggio, M.C., Liotta, A., De Grazia, E., Cimador, M., Di Pace, R. and Corsello, G. 2007. Polycystic ovary and gonadoblastoma in Turner's syndrome. *Minerva Pediatr.* 59: 397-401.
7. Helderma-van den Enden, A.T., de Jong, R., den Dunnen, J.T., Houwing-Duistermaat, J.J., Kneppers, A.L., Ginjaar, H.B., Breuning, M.H. and Bakker, E. 2009. Recurrence risk due to germ line mosaicism: Duchenne and Becker muscular dystrophy. *Clin. Genet.* 75: 465-472.
8. Kasper, C.K. and Buzin, C.H. 2009. Mosaicism and haemophilia. *Haemophilia*. E-published.
9. Kim, C.W., Moon, Y.A., Park, S.W., Cheng, D., Kwon, H.J. and Horton, J.D. 2010. Induced polymerization of mammalian acetyl-CoA carboxylase by MIG12 provides a tertiary level of regulation of fatty acid synthesis. *Proc. Natl. Acad. Sci. USA* 107: 9626-9631.

CHROMOSOMAL LOCATION

Genetic locus: Mid1ip1 (mouse) mapping to X A1.1.

PRODUCT

Mig12 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 Mig12 shRNA Plasmid (m): sc-149434-SH and Mig12 shRNA (m) Lentiviral Particles: sc-149434-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

Mig12 siRNA (m) is recommended for the inhibition of Mig12 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 Mig12 gene expression knockdown using RT-PCR Primer: Mig12 (m)-PR: sc-149434-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.