

NOM1 siRNA (m): sc-150029

BACKGROUND

NOM1 (nucleolar protein with MIF4G domain 1), also known as SGD1, is an 860 amino acid protein that localizes to the nucleolus, where it plays a role in targeting PP1. A member of the CWC22 family, NOM1 is expressed in skeletal muscle and heart, and contains one MI domain and a MIF4G domain. The MIF4G typically functions in protein translation and may act as a binding site for members of the eIF4A family. As such, NOM1 is thought to interact with eIF4AI, eIF4AII and eIF4AIII. The gene encoding NOM1 maps to human chromosome 7, which houses over 1,000 genes, comprises nearly 5% of the human genome and has been linked to osteogenesis imperfecta, Pendred syndrome, lissencephaly, citrullinemia and Shwachman-Diamond syndrome.

REFERENCES

1. Tsipouras, P., Myers, J.C., Ramirez, F. and Prockop, D.J. 1983. Restriction fragment length polymorphism associated with the pro α 2(I) gene of human type I procollagen. Application to a family with an autosomal dominant form of osteogenesis imperfecta. *J. Clin. Invest.* 72: 1262-1267.
2. Heus, H.C., Hing, A., van Baren, M.J., Joosse, M., Breedveld, G.J., Wang, J.C., Burgess, A., Donnis-Keller, H., Berglund, C., Zguricas, J., Scherer, S.W., Rommens, J.M., Oostra, B.A. and Heutink, P. 1999. A physical and transcriptional map of the preaxial polydactyly locus on chromosome 7q36. *Genomics* 57: 342-351.
3. Iwasaki, S., Usami, S., Abe, S., Isoda, H., Watanabe, T. and Hoshino, T. 2001. Long-term audiological feature in Pendred syndrome caused by PDS mutation. *Arch. Otolaryngol. Head Neck Surg.* 127: 705-708.
4. Simmons, H.M., Ruis, B.L., Kapoor, M., Hudacek, A.W. and Conklin, K.F. 2005. Identification of NOM1, a nucleolar, eIF4A binding protein encoded within the chromosome 7q36 breakpoint region targeted in cases of pediatric acute myeloid leukemia. *Gene* 347: 137-145.
5. Reiner, O., Sapoznik, S. and Sapir, T. 2006. Lissencephaly 1 linking to multiple diseases: mental retardation, neurodegeneration, schizophrenia, male sterility, and more. *Neuromolecular Med.* 8: 547-565.
6. Gilbert-Dussardier, B. 2006. Williams-Beuren syndrome. *Rev. Prat.* 56: 2102-2106.
7. Gunawardena, S.R., Ruis, B.L., Meyer, J.A., Kapoor, M. and Conklin, K.F. 2008. NOM1 targets protein phosphatase I to the nucleolus. *J. Biol. Chem.* 283: 398-404.
8. Alexandrov, A., Colognori, D. and Steitz, J.A. 2011. Human eIF4AIII interacts with an eIF4G-like partner, NOM1, revealing an evolutionarily conserved function outside the exon junction complex. *Genes Dev.* 25: 1078-1090.

CHROMOSOMAL LOCATION

Genetic locus: Nom1 (mouse) mapping to 5 B1.

PROTOCOLS

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

PRODUCT

NOM1 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 NOM1 shRNA Plasmid (m): sc-150029-SH and NOM1 shRNA (m) Lentiviral Particles: sc-150029-V as alternate gene silencing products.

For independent verification of NOM1 (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-150029A, sc-150029B and sc-150029C.

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

NOM1 siRNA (m) is recommended for the inhibition of NOM1 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 NOM1 gene expression knockdown using RT-PCR Primer: NOM1 (m)-PR: sc-150029-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.