

LEMD2 siRNA (m): sc-146701

BACKGROUND

LEMD2 (LEM domain containing 2), also known as NET25, is a 503 amino acid multi-pass membrane protein of the nuclear inner membrane that plays a role in the organization of nuclear structure. Ubiquitously expressed, LEMD2 contains one LEM domain and is encoded by a gene that maps to human chromosome 6p21.31 and mouse chromosome 17 A3.3. Chromosome 6 contains 170 million base pairs and comprises nearly 6% of the human genome. Deletion of a portion of the q arm of chromosome 6 is associated with early onset intestinal cancer, suggesting the presence of a cancer susceptibility locus. Additionally, porphyria cutanea tarda, Parkinson's disease, Stickler syndrome and a susceptibility to bipolar disorder are all associated with genes that map to chromosome 6.

REFERENCES

1. Brunner, H.G., van Beersum, S.E., Warman, M.L., Olsen, B.R., Ropers, H.H. and Mariman, E.C. 1994. A Stickler syndrome gene is linked to chromosome 6 near the COL11A2 gene. *Hum. Mol. Genet.* 3: 1561-1564.
2. Cesari, R., Martin, E.S., Calin, G.A., Pentimalli, F., Bichi, R., McAdams, H., Trapasso, F., Drusco, A., Shimizu, M., Masciullo, V., D'Andrilli, G., Scambia, G., Picchio, M.C., Alder, H., Godwin, A.K. and Croce, C.M. 2003. Parkin, a gene implicated in autosomal recessive juvenile parkinsonism, is a candidate tumor suppressor gene on chromosome 6q25-q27. *Proc. Natl. Acad. Sci. USA* 100: 5956-5961.
3. Brachner, A., Reipert, S., Foisner, R. and Gotzmann, J. 2005. LEM2 is a novel MAN1-related inner nuclear membrane protein associated with A-type lamins. *J. Cell Sci.* 118: 5797-5810.
4. Bläker, H., Mechttersheimer, G., Sutter, C., Hertkorn, C., Kern, M.A., Rieker, R.J., Penzel, R., Schirmacher, P. and Kloor, M. 2008. Recurrent deletions at 6q in early age of onset non-HNPCC- and non-FAP-associated intestinal carcinomas. Evidence for a novel cancer susceptibility locus at 6q14-q22. *Genes Chromosomes Cancer* 47: 159-164.
5. Huber, M.D., Guan, T. and Gerace, L. 2009. Overlapping functions of nuclear envelope proteins NET25 (Lem2) and emerin in regulation of extracellular signal-regulated kinase signaling in myoblast differentiation. *Mol. Cell. Biol.* 29: 5718-5728.
6. Fan, J., Ionita-Laza, I., McQueen, M.B., Devlin, B., Purcell, S., Faraone, S.V., Allen, M.H., Bowden, C.L., Calabrese, J.R., Fossey, M.D., Friedman, E.S., Gyulai, L., Hauser, P., Ketter, T.B., Marangell, L.B., Miklowitz, D.J., et al. 2010. Linkage disequilibrium mapping of the chromosome 6q21-22.31 bipolar I disorder susceptibility locus. *Am. J. Med. Genet. B Neuropsychiatr. Genet.* 153B: 29-37.
7. Jalil, S., Grady, J.J., Lee, C. and Anderson, K.E. 2010. Associations among behavior-related susceptibility factors in porphyria cutanea tarda. *Clin. Gastroenterol. Hepatol.* 8: 297-302, 302.e1.

CHROMOSOMAL LOCATION

Genetic locus: Lemd2 (mouse) mapping to 17 A3.3.

RESEARCH USE

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

PRODUCT

LEMD2 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 LEMD2 shRNA Plasmid (m): sc-146701-SH and LEMD2 shRNA (m) Lentiviral Particles: sc-146701-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

LEMD2 siRNA (m) is recommended for the inhibition of LEMD2 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 LEMD2 gene expression knockdown using RT-PCR Primer: LEMD2 (m)-PR: sc-146701-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.