

LMO1 siRNA (h): sc-38025

BACKGROUND

The LIM-only (LMO) proteins, LMO1 and LMO2, are nuclear factors that are characterized by a conserved LIM domain. The LIM domain consists of a cysteine-rich zinc-binding motif that is present in a variety of transcription factors, including the LIM homeobox (LHX) proteins expressed in the central nervous system and involved in cell differentiation. LMO1 and LMO2 are expressed in the adult CNS in a cell type-specific manner, where they are differentially regulated by neuronal activity and are involved in regulating the cellular differentiated phenotype of neurons. LMO2 lacks a specific DNA-binding homeobox domain but rather assembles into transcriptional regulatory complexes to mediate gene expression by interacting with the widely expressed nuclear LIM interactor (NLI). NLI, known also as CLIM-1, and the related protein CLIM-2 facilitate the formation of heteromeric LIM complexes and also enhance the nuclear retention of LIM proteins. LMO2 and the related protein LMO4 are expressed in thymic precursor cells. LMO4 is also expressed in mature T cells, cranial neural crest cells, somite, dorsal limb bud mesenchyme, motor neurons, and Schwann cell progenitors.

REFERENCES

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2. Grutz, G., et al. 1998. Identification of the LMO4 gene encoding an interaction partner of the LIM-binding protein LDB1/NLI1: a candidate for displacement by LMO proteins in T cell acute leukaemia. *Oncogene* 17: 2799-2803.
3. Valge-Archer, V., et al. 1998. The LMO1 and LDB1 proteins interact in human T cell acute leukaemia with the chromosomal translocation t(11;14)(p15;q11). *Oncogene* 17: 3199-3202.
4. Semina, E.V., et al. 1998. Cloning and chromosomal localization of two novel human genes encoding LIM-domain binding factors CLIM1 and CLIM2/LDB1/NLI. *Mamm. Genome* 9: 921-924.
5. Kenny, D.A., et al. 1998. Identification and characterization of LMO4, an LMO gene with a novel pattern of expression during embryogenesis. *Proc. Natl. Acad. Sci. USA* 95: 11257-11262.
6. Tse, E., et al. 1999. Characterization of the LMO4 gene encoding a LIM-only protein: genomic organization and comparative chromosomal mapping. *Mamm. Genome* 10: 1089-1094.
7. Chervinsky, D.S., et al. 1999. Disordered T-cell development and T-cell malignancies in SCL LMO1 double-transgenic mice: parallels with E2A-deficient mice. *Mol. Cell. Biol.* 19: 5025-5035.

CHROMOSOMAL LOCATION

Genetic locus: LMO1 (human) mapping to 11p15.4.

PROTOCOLS

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

PRODUCT

LMO1 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see LMO1 shRNA Plasmid (h): sc-38025-SH and LMO1 shRNA (h) Lentiviral Particles: sc-38025-V as alternate gene silencing products.

For independent verification of LMO1 (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-38025A, sc-38025B and sc-38025C.

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

LMO1 siRNA (h) is recommended for the inhibition of LMO1 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 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.

GENE EXPRESSION MONITORING

LMO1 (790C2a): sc-130628 is recommended as a control antibody for monitoring of LMO1 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor LMO1 gene expression knockdown using RT-PCR Primer: LMO1 (h)-PR: sc-38025-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.