SANTA CRUZ BIOTECHNOLOGY, INC.

LMO4 siRNA (m): sc-38030

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 of the central nervous system that contribute to cell differentiation. LMO1 and LMO2 are also 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 differentiated phenotype of neurons. LMO2 is implicated in blocking the cellular commitment towards terminal differentiation, and since it lacks a specific DNA-binding homeobox domain, LMO2 rather assembles into transcriptional regulatory complexes to mediate gene expression. LIM proteins form functional heteromeric LIM complexes by interacting with the widely expressed CLIM-2 (also designated nuclear LIM interactor or LIM binding domain 1), which serves to associate LIM proteins with other transcriptional regulatory components and also enhance the nuclear retention of LIM proteins. LMO2 and a related protein LMO4 are expressed in thymic precursor cells and LMO4 is also detected in mature T cells, cranial neural crest cells, dorsal limb bud mesenchyme, motor neurons, and Schwann cell progenitors.

REFERENCES

1. Boehm, T., et al. 1991. The rhombotin family of cysteine-rich LIM-domain oncogenes: distinct members are involved in T-cell translocations to human chromosomes 11p15 and 11p13. Proc. Natl. Acad. Sci. USA 88: 4367-4371.
2. Agulnick, A.D., et al. 1996. Interactions of the LIM-domain-binding factor Ldb1 with LIM homeodomain proteins. Nature 384: 270-272.
3. Hinks, G.L., et al. 1997. Expression of LIM protein genes LMO1, LMO2, and LMO3 in adult mouse hippocampus and other forebrain regions: differential regulation by seizure activity. J. Neurosci. 17: 5549-5559.
4. Rabbitts, T.H., et al. 1997. Chromosomal translocations and leukaemia: a role for LMO2 in T cell acute leukaemia, in transcription and in erythropoiesis. Leukemia 3: 271-272.
5. Osada, H., et al. 1997. LIM-only protein LMO2 forms a protein complex with erythroid transcription factor GATA-1. Leukemia 3: 307-312.

CHROMOSOMAL LOCATION

Genetic locus: Lmo4 (mouse) mapping to 3 H2.

PRODUCT

LMO4 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see LMO4 shRNA Plasmid (m): sc-38030-SH and LMO4 shRNA (m) Lentiviral Particles: sc-38030-V as alternate gene silencing products.

For independent verification of LMO4 (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-38030A, sc-38030B and sc-38030C.

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 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

LMO4 siRNA (m) is recommended for the inhibition of LMO4 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 µM in 66 µl. 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

LMO4 (4H8): sc-293440 is recommended as a control antibody for monitoring of LMO4 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).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGλ BP-HRP: sc-516132 or m-IgGλ BP-HRP (Cruz Marker): sc-516132-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGλ BP-FITC: sc-516185 or m-IgGλ BP-PE: sc-516186 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor LMO4 gene expression knockdown using RT-PCR Primer: LMO4 (m)-PR: sc-38030-PR (20 µl, 479 bp). 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.