



LHX2 siRNA (m): sc-38711

BACKGROUND

During development, genetically distinct subtypes of motor neurons express unique combinations of LIM-type homeodomain factors, which regulate cell migration and guide motor axons to establish the fidelity of a binary choice in axonal trajectory. The LIM gene family encodes a set of gene products, which carry the LIM domain, a unique cysteine-rich zinc-binding domain. At least 40 members of this family have been identified in vertebrates and invertebrates, and are distributed into 4 groups according to the number of LIM domains and to the presence of homeodomains and kinase domains. The overlapping expression of LHX1, LHX3, LHX4, Isl-1 and Isl-2 in developing motoneurons along the spinal column may influence the establishment of specific motoneuron subtypes. The human LHX2 gene maps to chromosome 9q33.3 and encodes a 389 amino acid protein. LHX2 is involved in early patterning of the telencephalon, where the neuroepithelium is first divided into cortical tissue and cortical hem.

REFERENCES

1. Lilly, B., et al. 1999. The LIM homeodomain protein dLim1 defines a subclass of neurons within the embryonic ventral nerve cord of *Drosophila*. *Mech. Dev.* 88: 195-205.
2. Cheah, S.S., et al. 2000. Requirement of LIM domains for LIM1 function in mouse head development. *Genesis* 27: 12-21.
3. Sharma, K., et al. 2000. Genetic and epigenetic mechanisms contribute to motor neuron pathfinding. *Nature* 406: 515-519.
4. Online Mendelian Inheritance in Man, OMIM™. 2000. Johns Hopkins University, Baltimore, MD. MIM Number: 603759. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
5. Bulchand, S., et al. 2001. LIM-homeodomain gene Lhx2 regulates the formation of the cortical hem. *Mech. Dev.* 100: 165-175.
6. LocusLink Report (LocusID: 3975). <http://www.ncbi.nlm.nih.gov/LocusLink/>

CHROMOSOMAL LOCATION

Genetic locus: Lhx2 (mouse) mapping to 2 B.

PRODUCT

LHX2 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 LHX2 shRNA Plasmid (m): sc-38711-SH and LHX2 shRNA (m) Lentiviral Particles: sc-38711-V as alternate gene silencing products.

For independent verification of LHX2 (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-38711A, sc-38711B and sc-38711C.

PROTOCOLS

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

LHX2 siRNA (m) is recommended for the inhibition of LHX2 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.

GENE EXPRESSION MONITORING

LHX2 (6G2): sc-517243 is recommended as a control antibody for monitoring of LHX2 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-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-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-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (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 LHX2 gene expression knockdown using RT-PCR Primer: LHX2 (m)-PR: sc-38711-PR (20 μ l, 444 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.