

LHX6 siRNA (m): sc-75426

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 proteins which carry the LIM domain, a unique cysteine-rich zinc-binding motif. LHX6 (LIM homeobox 6), also known as LHX6.1, is a 363 amino acid nuclear protein that contains two LIM zinc-binding domains and one homeobox DNA-binding domain. Expressed specifically in brain, LHX6 is thought to function as a transcriptional regulator that may play a role in the development and differentiation of lymphoid and neural cells. Additionally, LHX6 is hypermethylated in head and neck carcinomas and may be a novel tumor marker. Two isoforms of LHX6, designated LHX6.1A and LHX6.1B, exist due to alternative splicing events.

REFERENCES

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2. Kimura, N., et al. 1999. A brain region-specific gene product LHX6.1 interacts with Ldb1 through tandem LIM-domains. *J. Biochem.* 126: 180-187.
3. Online Mendelian Inheritance in Man, OMIM[™]. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 608215. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
4. Gong, S., et al. 2003. A gene expression atlas of the central nervous system based on bacterial artificial chromosomes. *Nature* 425: 917-925.
5. Alifragis, P., et al. 2004. LHX6 regulates the migration of cortical interneurons from the ventral telencephalon but does not specify their GABA phenotype. *J. Neurosci.* 24: 5643-5648.
6. Choi, G.B., et al. 2005. LHX6 delineates a pathway mediating innate reproductive behaviors from the amygdala to the hypothalamus. *Neuron* 46: 647-660.
7. Estécio, M.R., et al. 2006. LHX6 is a sensitive methylation marker in head and neck carcinomas. *Oncogene* 25: 5018-5026.

CHROMOSOMAL LOCATION

Genetic locus: Lhx6 (mouse) mapping to 2 B.

PRODUCT

LHX6 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 LHX6 shRNA Plasmid (m): sc-75426-SH and LHX6 shRNA (m) Lentiviral Particles: sc-75426-V as alternate gene silencing products.

For independent verification of LHX6 (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-75426A, sc-75426B and sc-75426C.

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

LHX6 siRNA (m) is recommended for the inhibition of LHX6 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

LHX6 (A-9): sc-271433 is recommended as a control antibody for monitoring of LHX6 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 LHX6 gene expression knockdown using RT-PCR Primer: LHX6 (m)-PR: sc-75426-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.

PROTOCOLS

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