SANTA CRUZ BIOTECHNOLOGY, INC.

LMX1A siRNA (m): sc-72344

BACKGROUND

LMX1A, also called LMX-1.1 or LIM homeobox transcription factor 1 α, belongs to the LIM-homeodomain family. Members of this family are known to be important for pattern formation during development. LMX1A functions in the nucleus as a transcriptional activator to the Insulin gene promoter. In the developing embryo, LMX1A is expressed along the neuraxis and leads to the development of the roof plate of the vertebrae. Two isoforms of LMX1A exist due to alternative splicing. Isoform 1 represents the full length protein and is expressed in many tissues including fetal brain, but is absent in heart, liver, spleen and testis. The second isoform, designated LMX1A-4AB, lacks amino acids 1-249 and is expressed in testis.

REFERENCES

1. Millonig, J.H., et al. 2000. The mouse Dreher gene Lmx1a controls formation of the roof plate in the vertebrate CNS. Nature 403: 764-769.
2. Thameem, F., et al. 2002. Cloning, expression and genomic structure of human LMX1A, and variant screening in Pima Indians. Gene 290: 217-225.
3. Failli, V., et al. 2002. Expression of the LIM-homeodomain gene Lmx1a (dreher) during development of the mouse nervous system. Mech. Dev. 118: 225-228.
4. Chizhikov, V.V., et al. 2004. Control of roof plate formation by Lmx1a in the developing spinal cord. Development 131: 2693-2705.
5. Chizhikov, V.V., et al. 2004. Control of roof plate development and signaling by Lmx1b in the caudal vertebrate CNS. J. Neurosci. 24: 5694-5703.
6. Andersson, E., et al. 2006. Identification of intrinsic determinants of midbrain dopamine neurons. Cell 124: 393-405.
7. Burbach, J.P., et al. 2006. Molecular programming of stem cells into mesodiencephalic dopaminergic neurons. Trends Neurosci. 29: 601-603.

CHROMOSOMAL LOCATION

Genetic locus: Lmx1a (mouse) mapping to 1 H2.3.

PRODUCT

LMX1A 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 LMX1A shRNA Plasmid (m): sc-72344-SH and LMX1A shRNA (m) Lentiviral Particles: sc-72344-V as alternate gene silencing products.

For independent verification of LMX1A (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-72344A, sc-72344B and sc-72344C.

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 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

LMX1A siRNA (m) is recommended for the inhibition of LMX1A 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor LMX1A gene expression knockdown using RT-PCR Primer: LMX1A (m)-PR: sc-72344-PR (20 µl). 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.