

Emx2 siRNA (h): sc-38737

BACKGROUND

Emx1 and Emx2 are human homologs to the *Drosophila* developmental genes empty spiracles expressed in anterior body regions during early *Drosophila* embryogenesis. Emx1 and Emx2 are homeobox proteins expressed in the developing vertebrate brain. Emx2 is expressed in the dorsal telencephalon and small diencephalic regions, while Emx1 expression is exclusively confined to pyramidal neurons of the dorsal telencephalon. In the embryonic brain, Emx1 is expressed in both proliferating and differentiating neurons while Emx2 is expressed only in proliferating neurons. OTX1 and OTX2 are human homologs of the *Drosophila* developmental genes orthodenticle. In development, the sequence of expression begins with OTX2 at day 10 post coitum followed by OTX1, Emx2 and finally Emx1. The genes encoding human Emx1 and Emx2 map to chromosomes 2p13.2 and 10q26.1, respectively.

REFERENCES

1. Simeone, A., et al. 1992. Two vertebrate homeobox genes related to the *Drosophila* empty spiracles gene are expressed in the embryonic cerebral cortex. *EMBO J.* 11: 2541-2550.
2. Simeone, A., et al. 1992. Nested expression domains of four homeobox genes in developing rostral brain. *Nature* 358: 687-690.
3. Kastury, K., et al. 1994. Chromosome locations of human Emx and OTX genes. *Genomics* 22: 41-45.
4. Gulisano, M., et al. 1996. Emx1 and Emx2 show different patterns of expression during proliferation and differentiation of the developing cerebral cortex in the mouse. *Eur. J. Neurosci.* 8: 1037-1050.
5. Chan, C.H., et al. 2001. Emx1 is a marker for pyramidal neurons of the cerebral cortex. *Cereb. Cortex* 11: 1191-1198.

CHROMOSOMAL LOCATION

Genetic locus: EMX2 (human) mapping to 10q26.11.

PRODUCT

Emx2 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 Emx2 shRNA Plasmid (h): sc-38737-SH and Emx2 shRNA (h) Lentiviral Particles: sc-38737-V as alternate gene silencing products.

For independent verification of Emx2 (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-38737A, sc-38737B and sc-38737C.

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.

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

Emx2 siRNA (h) is recommended for the inhibition of Emx2 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Emx2 gene expression knockdown using RT-PCR Primer: Emx2 (h)-PR: sc-38737-PR (20 μ l, 551 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.