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# VAX1 siRNA (m): sc-155096

## BACKGROUND

The homeobox DNA-binding domain is a 60 amino acid motif that is conserved among many species and functions to bind DNA via a helix-turn-helix structure, thereby playing a role in transcriptional regulation and the control of gene expression. VAX1 (ventral anterior homeobox 1) is a 334 amino acid protein that localizes to the nucleus and contains one homeobox DNA-binding domain. Expressed as multiple alternatively spliced isoforms, VAX1 is required for major tract formation and axon guidance in the developing brain and may play a role in the differentiation of various structures, including the optic stalk, the neuroretina and the pigmented epithelium. The gene encoding VAX1 maps to human chromosome 10, which houses over 1,200 genes and comprises nearly 4.5% of the human genome.

## REFERENCES

- Hallonet, M., et al. 1998. VAX1 is a novel homeobox-containing gene expressed in the developing anterior ventral forebrain. *Development* 125: 2599-2610.
- Bertuzzi, S., et al. 1999. The homeodomain protein VAX1 is required for axon guidance and major tract formation in the developing forebrain. *Genes Dev.* 13: 3092-3105.
- Hallonet, M., et al. 1999. VAX1, a novel homeobox-containing gene, directs development of the basal forebrain and visual system. *Genes Dev.* 13: 3106-3114.
- Barbieri, A.M., et al. 1999. A homeobox gene, VAX2, controls the patterning of the eye dorsoventral axis. *Proc. Natl. Acad. Sci. USA* 96: 10729-10734.
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- Online Mendelian Inheritance in Man, OMIM™. 2005. Johns Hopkins University, Baltimore, MD. MIM Number: 604294. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
- Holland, P.W., et al. 2007. Classification and nomenclature of all human homeobox genes. *BMC Biol.* 5: 47.

## CHROMOSOMAL LOCATION

Genetic locus: Vax1 (mouse) mapping to 19 D3.

## PRODUCT

VAX1 siRNA (m) is a target-specific 19-25 nt siRNA designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see VAX1 shRNA Plasmid (m): sc-155096-SH and VAX1 shRNA (m) Lentiviral Particles: sc-155096-V as alternate gene silencing products.

## PROTOCOLS

See our web site at [www.scbt.com](http://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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

VAX1 siRNA (m) is recommended for the inhibition of VAX1 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  $\mu$ M in 66  $\mu$ 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 VAX1 gene expression knockdown using RT-PCR Primer: VAX1 (m)-PR: sc-155096-PR (20  $\mu$ 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.