

Sox-2 siRNA (m): sc-38409

BACKGROUND

Sox genes comprise a family of genes that are related to the mammalian sex determining gene SRY. These genes similarly contain sequences that encode for the HMG-box domain, which is responsible for the sequence-specific DNA-binding activity. Sox genes encode putative transcriptional regulators implicated in the decision of cell fates during development and the control of diverse developmental processes. The highly complex group of Sox genes cluster at least 40 different loci that rapidly diverged in various animal lineages. At present, 30 Sox genes have been identified. Members of this family have been shown to be conserved during evolution and to play key roles during animal development. Some are involved in human diseases, including sex reversal.

REFERENCES

- Laudet, V., et al. 1993. Ancestry and diversity of the HMG box superfamily. *Nucleic Acids Res.* 21: 2493-2501.
- Kuhlbrodt, K., et al. 1998. Sox-10, a novel transcriptional modulator in glial cells. *J. Neurosci.* 18: 237-250.
- Arsic, N., et al. 1998. Characterisation and mapping of the human SOX14 gene. *Cytogenet. Cell Genet.* 83: 139-146.
- Osaki, E., et al. 1999. Identification of a novel Sry-related gene and its germ cell-specific expression. *Nucleic Acids Res.* 27: 2503-2510.

CHROMOSOMAL LOCATION

Genetic locus: Sox2 (mouse) mapping to 3 A3.

PRODUCT

Sox-2 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 Sox-2 shRNA Plasmid (m): sc-38409-SH and Sox-2 shRNA (m) Lentiviral Particles: sc-38409-V as alternate gene silencing products.

For independent verification of Sox-2 (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-38409A, sc-38409B and sc-38409C.

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

Sox-2 siRNA (m) is recommended for the inhibition of Sox-2 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

Sox-2 (E-4): sc-365823 is recommended as a control antibody for monitoring of Sox-2 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 Sox-2 gene expression knockdown using RT-PCR Primer: Sox-2 (m)-PR: sc-38409-PR (20 μ l, 362 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

- Liou, J.Y., et al. 2010. An efficient transfection method for mouse embryonic stem cells. *Methods Mol. Biol.* 650: 145-153.
- Xia, M. and Zhu, Y. 2015. The regulation of Sox-2 and Sox-9 stimulated by ATP in spinal cord astrocytes. *J. Mol. Neurosci.* 55: 131-140.
- Lee, M.J., et al. 2016. Sox-2 contributes to tooth development via Wnt signaling. *Cell Tissue Res.* 365: 77-84.
- Liou, J.Y., et al. 2017. An efficient transfection method for differentiation and cell proliferation of mouse embryonic stem cells. *Methods Mol. Biol.* 1622: 139-147.
- Shen, C., et al. 2020. Sox-2 is a positive regulator of osteoclast differentiation. *Biochem. Biophys. Res. Commun.* 526: 147-153.
- Shen, C., et al. 2021. Transcription factor Sox-2 contributes to nonalcoholic fatty liver disease development by regulating the expression of the fatty acid transporter CD36. *FEBS Lett.* 595: 2493-2503.

RESEARCH USE

For research use only, not for use in diagnostic procedures.