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# FOXD3 siRNA (h): sc-43768

## BACKGROUND

Embryonic stem cells require the forkhead transcriptional regulator FOXD3 for survival. Following gastrulation, FOXD3 generally gets downregulated, except in the neural crest. A variety of growth factors induce FOXD3 expression, including FGF8 and SNAIL, maintaining the effected cells in an undifferentiated state. Thus defects in FOXD3 induction may cause premature differentiation and/or migration-associated birth defects.

## REFERENCES

- Hanna, L.A., et al. 2002. Requirement for FOXD3 in maintaining pluripotent cells of the early mouse embryo. *Genes Dev.* 16: 2650-2661.
- Guo, Y., et al. 2002. The embryonic stem cell transcription factors Oct-4 and FOXD3 interact to regulate endodermal-specific promoter expression. *Proc. Natl. Acad. Sci. USA* 99: 3663-3667.
- Aybar, M.J., et al. 2003. SNAIL precedes SLUG in the genetic cascade required for the specification and migration of the *Xenopus* neural crest. *Development* 130: 483-494.
- Monsoro-Burq, A.H., et al. 2003. Neural crest induction by paraxial mesoderm in *Xenopus* embryos requires FGF signals. *Development* 130: 3111-3124.
- Tucker, R.P. 2004. Neural crest cells: a model for invasive behavior. *Int. J. Biochem. Cell Biol.* 36: 173-177.
- Perez-Alcala, S., et al. 2004. LSox-5 regulates Rho B expression in the neural tube and promotes generation of the neural crest. *Development* 131: 4455-4465.
- Ginis, I., et al. 2004. Differences between human and mouse embryonic stem cells. *Dev. Biol.* 269: 360-380.

## CHROMOSOMAL LOCATION

Genetic locus: FOXD3 (human) mapping to 1p31.3.

## PRODUCT

FOXD3 siRNA (h) 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 FOXD3 shRNA Plasmid (h): sc-43768-SH and FOXD3 shRNA (h) Lentiviral Particles: sc-43768-V as alternate gene silencing 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

FOXD3 siRNA (h) is recommended for the inhibition of FOXD3 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  $\mu$ 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.

## GENE EXPRESSION MONITORING

FOXD3 (5G9B10): sc-517206 is recommended as a control antibody for monitoring of FOXD3 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 $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor FOXD3 gene expression knockdown using RT-PCR Primer: FOXD3 (h)-PR: sc-43768-PR (20  $\mu$ l, 523 bp). 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](http://www.scbt.com) for detailed protocols and support products.