SANTA CRUZ BIOTECHNOLOGY, INC.

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, in-cluding FGF8 and SNAIL, maintaining the effected cells in an undifferentiated state. Thus defects in FOXD3 induction may cause premature differentiation and/or migration-asociated birth defects.

REFERENCES

1. Hanna, L.A., et al. 2002. Requirement for FOXD3 in maintaining pluripotent cells of the early mouse embryo. Genes Dev. 16: 2650-2661.
2. 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.
3. 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.
4. Monsoro-Burq, A.H., et al. 2003. Neural crest induction by paraxial mesoderm in *Xenopus* embryos requires FGF signals. Development 130: 3111-3124.
5. Tucker, R.P. 2004. Neural crest cells: a model for invasive behavior. Int. J. Biochem. Cell Biol. 36: 173-177.
6. 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.
7. 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 µM 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 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

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 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.

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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 FOXD3 gene expression knockdown using RT-PCR Primer: FOXD3 (h)-PR: sc-43768-PR (20 µl, 523 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Batmanov, K., et al. 2017. Integrative whole-genome sequence analysis reveals roles of regulatory mutations in BCL6 and BCL2 in follicular lymphoma. Sci. Rep. 7: 7040.

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.