SANTA CRUZ BIOTECHNOLOGY, INC.

FOXI2 siRNA (h): sc-90482

BACKGROUND

FOXI2 (forkhead box I2) is a 318 amino acid nuclear protein that contains one fork-head DNA-binding domain and is a member of the FOX family of transcription factors. The FOX family is a large group of proteins (consisting of at least 43 members) that share a common DNA binding domain termed winged-helix or forkhead domain. FOX transcription factors play important roles in development, differentiation, aging and hormone responsiveness. Considered a cranial epidermis marker, FOXI2 expression is mainly confined to subsets of cells in epithelial structures and particular ducts, in addition to the developing forebrain and neural retina. It is suggested that FOXI2 may be involved in regulating cellular identity. FOXI2 is encoded by a gene located on human chromosome 10, which contains over 800 genes and 135 million nucleotides, making up nearly 4.5% of the human genome.

REFERENCES

1. Hulander, M., et al. 1998. The winged helix transcription factor Fkh10 is required for normal development of the inner ear. Nat. Genet. 20: 374-376.
2. Solomon, K.S., et al. 2003. Expression and phylogenetic analyses of three zebrafish foxi class genes. Dev. Dyn. 228: 301-307.
3. Nissen, R.M., et al. 2003. Zebrafish foxi one modulates cellular responses to Fgf signaling required for the integrity of ear and jaw patterning. Development 130: 2543-2554.
4. Ohyama, T. and Groves, A.K. 2004. Expression of mouse Foxi class genes in early craniofacial development. Dev. Dyn. 231: 640-646.
5. Wijchers, P.J., et al. 2005. Cloning and analysis of the murine FOXI2 transcription factor. Biochim. Biophys. Acta 1731: 133-138.
6. Pohl, B.S., et al. 2005. The Fox gene family in *Xenopus laevis*:FOXI2, FOXM1 and FoxP1 in early development. Int. J. Dev. Biol. 49: 53-58.
7. Blomqvist, S.R., et al. 2006. Epididymal expression of the forkhead transcription factor FOXI1 is required for male fertility. EMBO J. 25: 4131-4141.
8. Sun, S.K., et al. 2007. Epibranchial and otic placodes are induced by a common Fgf signal, but their subsequent development is independent. Dev. Biol. 303: 675-686.

CHROMOSOMAL LOCATION

Genetic locus: FOXI2 (human) mapping to 10q26.2.

PRODUCT

FOXI2 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see FOXI2 shRNA Plasmid (h): sc-90482-SH and FOXI2 shRNA (h) Lentiviral Particles: sc-90482-V as alternate gene silencing products.

For independent verification of FOXI2 (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-90482A, sc-90482B and sc-90482C.

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

FOXI2 siRNA (h) is recommended for the inhibition of FOXI2 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

FOXI2 (E-5): sc-515114 is recommended as a control antibody for monitoring of FOXI2 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 FOXI2 gene expression knockdown using RT-PCR Primer: FOXI2 (h)-PR: sc-90482-PR (20 µl). 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 for detailed protocols and support products.