SANTA CRUZ BIOTECHNOLOGY, INC.

FOXN2 siRNA (h): sc-62341

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The Power to Question

BACKGROUND

The forkhead domain-containing gene family (Fox) comprises over 20 members in mammals and is defined by a conserved 110 amino-acid motif containing a winged helix structure DNA-binding domain. The members of this gene family have been implicated as key regulators of embryogenesis, cell cycling, cell lineage restriction and cancer. As such, FOXN2 contains a domain with homology to the forkhead DNA binding domain. FOXN2, or Human T-cell leukemia virus enhancer factor, is a 341 amino acid protein mapping to human gene FOXN2, which has been localized to human chromosome 2p16.3. This protein, encoded by a 1,239-bp cDNA isolated from the Jurkat cDNA library, is capable of binding to a region of the human T-cell leukemia virus long terminal repeat (HTLV-I LTR) located between amino acids 155 and 117. This purine-rich region is important in the regulation of gene expression by the Ets family of transcription factors. FOXN2 is a unique cellular gene that may function in the transcriptional regulation of HTLV-I LTR.

REFERENCES

1. Li, C., et al. 1992. Characterization and chromosomal mapping of the gene encoding the cellular DNA binding protein HTLF. Genomics 13: 658-664.
2. Schlake, T., et al. 2000. Formation of regulator/target gene relationships during evolution. Gene 256: 29-34.
3. Ariyama, Y., et al. 2000. Chromosomal imbalances in adult T-cell leukemia revealed by comparative genomic hybridization: gains at 14q and 2p16-22 in cell lines. J. Hum. Genet. 44: 357-363.
4. Boehm, T., et al. 2003. Genetic dissection of thymus development in mouse and zebrafish. Immunol. Rev. 195: 15-27.

CHROMOSOMAL LOCATION

Genetic locus: FOXN2 (human) mapping to 2p16.3.

PRODUCT

FOXN2 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 FOXN2 shRNA Plasmid (h): sc-62341-SH and FOXN2 shRNA (h) Lentiviral Particles: sc-62341-V as alternate gene silencing products.

For independent verification of FOXN2 (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-62341A, sc-62341B and sc-62341C.

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

FOXN2 siRNA (h) is recommended for the inhibition of FOXN2 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

FOXN2 (D-4): sc-514664 is recommended as a control antibody for monitoring of FOXN2 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 FOXN2 gene expression knockdown using RT-PCR Primer: FOXN2 (h)-PR: sc-62341-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Hardy, K., et al. 2016. Identification of chromatin accessibility domains in human breast cancer stem cells. Nucleus 7: 50-67.

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.