SANTA CRUZ BIOTECHNOLOGY, INC.

FOXF1 siRNA (h): sc-60655

BACKGROUND

The FOX family of transcription factors share a common DIUA binding domain termed a winged-helix or forkhead domain. Many FOX proteins play important roles in development, metabolism, cancer and aging. Development of the vertebrate gut is controlled by paracrine crosstalk between the endodermal epithelium and the associated splanchnic mesoderm. FOXF1, previously designated HFH-8 or Freac-1, is expressed in the splanchnic mesoderm and required for proper development of gut-derived organs, including the liver, gallbladder, lung and intestinal tract. Inactivation of FOXF1 results in a range of defects, including megacolon, colorectal muscle hypoplasia and aganglionosis. FOXF1 controls epithelial proliferation and survival and links hedgehog proteins to BMP and Wnt signaling pathways.

REFERENCES

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2. Kalinichenko, V.V., et al. 2002. Wildtype levels of the mouse Foxf1 gene are essential for lung repair. Am. J. Physiol. Lung Cell. Mol. Physiol. 282: L1253-L1265.
3. Kalinichenko, V.V., et al. 2004. FOXF1 haplo-insufficiency reduces Notch 2 signaling during mouse lung development. Am. J. Physiol. Lung Cell. Mol. Physiol. 286: L521-L530.
4. Katoh, M., et al. 2004. Human FOX gene family. Int. J. Oncol. 25: 1495-1500.
5. Ormestad, M., et al. 2004. Differences in the embryonic expression patterns of mouse FOXF1 and 2 match their distinct mutant phenotypes. Dev. Dyn. 229: 328-333.
6. Kim, I.M., et al. 2005. Functional characterization of evolutionarily conserved DNA regions in FOXF1 gene locus. J. Biol. Chem. 280: 37908-37916.
7. Lomenick, J., et al. 2006. Transcription factor FOXF1 regulates growth hormone variant gene expression. Am. J. Physiol. Endocrinol. Metab. 291: E947-E951.
8. Ormestad, M., et al. 2006. FOXF1 and FOXF2 control murine gut development by limiting mesenchymal Wnt signaling and promoting extracellular matrix production. Development 133: 833-843.

CHROMOSOMAL LOCATION

Genetic locus: FOXF1 (human) mapping to 16q24.1.

PRODUCT

FOXF1 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 FOXF1 shRNA Plasmid (h): sc-60655-SH and FOXF1 shRNA (h) Lentiviral Particles: sc-60655-V as alternate gene silencing products.

For independent verification of FOXF1 (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-60655A, sc-60655B and sc-60655C.

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

FOXF1 siRNA (h) is recommended for the inhibition of FOXF1 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor FOXF1 gene expression knockdown using RT-PCR Primer: FOXF1 (h)-PR: sc-60655-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. Liu, X., et al. 2022. HER2 drives lung fibrosis by activating a metastatic cancer signature in invasive lung fibroblasts. J. Exp. Med. 219: e20220126.

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.