SANTA CRUZ BIOTECHNOLOGY, INC.

TGIF2 siRNA (m): sc-63124

BACKGROUND

TGIF2 (TGFβ-induced factor homeobox 2), also called 5'-TG-3'-interacting factor 2, is a widely expressed protein with predominant expression in kidney, heart and testis, and it belongs to the TALE/TGIF homeobox family. Localizing to the nucleus, TGIF2 contains one homeobox DNA-binding domain and is believed to function as a transcriptional repressor. Similar to the closely related protein TGIF, TGIF2 recruits histone deacetylases (HDACs) to TGFβ-responsive genes, thereby mediating their transcriptional repression. Specifically, TGIF2 interacts with HDAC1 and the transcriptional modulator Smad3. Mutations in the gene encoding TGIF2 can result in holoprosencephaly, a disorder characterized by the underdevelopment of the prosencephalon. In addition, TGIF2 is overexpressed in some ovarian cancers, suggesting a possible role of TGIF2 in carcinogenesis.

REFERENCES

1. Imoto, I., et al. 2000. Amplification and overexpression of TGIF2, a novel homeobox gene of the TALE superclass, in ovarian cancer cell lines. Biochem. Biophys. Res. Commun. 276: 264-270.
2. Melhuish, T.A., et al. 2001. TGIF2 interacts with histone deacetylase 1 and represses transcription. J. Biol. Chem. 276: 32109-32114.
3. Watanabe, T., et al. 2002. Differentially regulated genes as putative targets of amplifications at 20q in ovarian cancers. Jpn. J. Cancer Res. 93: 1114-1122.
4. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 607294. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Wang, X., et al. 2004. Rapid evolution of mammalian X-linked testis-expressed homeobox genes. Genetics 167: 879-888.
6. Chung, C.M., et al. 2005. Amplification and overexpression of aurora kinase A (AURKA) in immortalized human ovarian epithelial (HOSE) cells. Mol. Carcinog. 43: 165-174.
7. Jin, L., et al. 2005. Expression pattern of TG-interacting factor 2 during mouse development. Gene Expr. Patterns 5: 457-462.
8. Melhuish, T.A., et al. 2006. The TGIF2 gene contains a retained intron within the coding sequence. BMC Mol. Biol. 7: 2.

CHROMOSOMAL LOCATION

Genetic locus: Tgif2 (mouse) mapping to 2 H1.

PRODUCT

TGIF2 siRNA (m) 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 TGIF2 shRNA Plasmid (m): sc-63124-SH and TGIF2 shRNA (m) Lentiviral Particles: sc-63124-V as alternate gene silencing products.

For independent verification of TGIF2 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-63124A, sc-63124B and sc-63124C.

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

TGIF2 siRNA (m) is recommended for the inhibition of TGIF2 expression in mouse 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 TGIF2 gene expression knockdown using RT-PCR Primer: TGIF2 (m)-PR: sc-63124-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. Krzeszinski, J.Y., et al. 2014. miR-34a blocks osteoporosis and bone metastasis by inhibiting osteoclastogenesis and TGIF2. Nature 512: 431-435.

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.