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SANTA CRUZ BIOTECHNOLOGY, INC.

PCIF1 siRNA (m): sc-152111

BACKGROUND

PCIF1 (phosphorylated CTD-interacting factor 1), also known as C20orf67, is a 704 amino acid nuclear protein that contains one WW domain. Expressed throughout the body, PCIF1 is thought to play a role in transcription elongation and may be involved in coupling transcription to pre-mRNA processing, specifically by interacting with the phosphorylated carboxy terminal domain (CTD) of Pol II. Additionally, PCIF1 interacts with and inhibits the activity of PDX-1 (pancreatic and duodenal homeobox-1), thereby regulating β-cell differentiation and, ultimately, contributing to normal pancreatic development. Via its ability to influence pancreatic organogenesis, PCIF1 may be involved in the pathogenesis of diabetes and may be a potential target for the therapeutic treatment of diabetes.

REFERENCES

1. Kang, M.E. and Dahmus, M.E. 1993. RNA polymerases IIA and IIO have distinct roles during transcription from the TATA-less murine dihydrofolate reductase promoter. J. Biol. Chem. 268: 25033-25040.
2. Peshavaria, M., et al. 2000. The PDX-1 activation domain provides specific functions necessary for transcriptional stimulation in pancreatic β-cells. Mol. Endocrinol. 14: 1907-1917.
3. Emili, A., et al. 2002. Splicing and transcription-associated proteins PSF and p54nrb/nonO bind to the RNA polymerase II CTD. RNA 8: 1102-1111.
4. Fan, H., et al. 2003. PCIF1, a novel human WW domain-containing protein, interacts with the phosphorylated RNA polymerase II. Biochem. Biophys. Res. Commun. 301: 378-385.
5. Liu, A., et al. 2004. Identification of PCIF1, a POZ domain protein that inhibits PDX-1 (MODY4) transcriptional activity. Mol. Cell. Biol. 24: 4372-4383.
6. Liu, A., et al. 2006. Two conserved domains in PCIF1 mediate interaction with pancreatic transcription factor PDX-1. FEBS Lett. 580: 6701-6706.
7. Hirose, Y. and Ohkuma, Y. 2007. Phosphorylation of the C-terminal domain of RNA polymerase II plays central roles in the integrated events of eucaryotic gene expression. J. Biochem. 141: 601-608.

CHROMOSOMAL LOCATION

Genetic locus: Pcif1 (mouse) mapping to 2 H3.

PRODUCT

PCIF1 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 PCIF1 shRNA Plasmid (m): sc-152111-SH and PCIF1 shRNA (m) Lentiviral Particles: sc-152111-V as alternate gene silencing products.

For independent verification of PCIF1 (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-152111A, sc-152111B and sc-152111C.

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

PCIF1 siRNA (m) is recommended for the inhibition of PCIF1 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.

GENE EXPRESSION MONITORING

PCIF1 (A-9): sc-374406 is recommended as a control antibody for monitoring of PCIF1 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 PCIF1 gene expression knockdown using RT-PCR Primer: PCIF1 (m)-PR: sc-152111-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.