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PIMT siRNA (h): sc-45875

BACKGROUND

The PIMT (PRIP-interacting protein with methyltransferase domain) protein binds to the nuclear receptor coactivator PRIP (peroxisome proliferator-activated receptor (PPAR)-interacting protein), enhancing the coactivator function of PRIP. PIMT and PRIP co-localize to the nucleus. PPAR γ -induced transcription increases irrespective of singular or co-transfection of PIMT and PRIP. PIMT enhances the PBP-mediated transcriptional activity of PPAR γ and represses the CBP/p300-mediated transactivation of PPAR γ . PIMT also binds and co-localizes to the nucleus with the transcription activators CBP, p300 and PBP. PIMT may also be a putative RNA methyltransferase, as it binds both the methyl donor for the methyltransfer reaction (S-adenosyl-L-methionine) and RNA. The human PIMT gene maps to chromosome 8q12.1 and encodes a 852 amino acid protein, which is highly expressed in heart, skeletal muscle, kidney, liver and placenta. The PPAR α -interacting cofactor (PRIC) complex comprises PIMT, PRIP, CBP, PBP and more than 20 other coactivators or coactivator-binding proteins. Ciprofibrate and leukotriene B4 both induce PRIC complex-PPAR α interaction, which enhances transcription.

REFERENCES

1. Caira, F., et al. 2000. Cloning and characterization of RAP250, a novel nuclear receptor coactivator. *J. Biol. Chem.* 275: 5308-5317.
2. Zhu, Y., et al. 2000. Isolation and characterization of peroxisome proliferator-activated receptor (PPAR) interacting protein (PRIP) as a coactivator for PPAR. *J. Biol. Chem.* 275: 13510-13516.
3. Zhu, Y., et al. 2001. Cloning and characterization of PIMT, a protein with a methyltransferase domain, which interacts with and enhances nuclear receptor coactivator PRIP function. *Proc. Natl. Acad. Sci. USA* 98: 10380-10385.
4. Misra, P., et al. 2002. Interaction of PIMT with transcriptional coactivators CBP, p300, and PBP differential role in transcriptional regulation. *J. Biol. Chem.* 277: 20011-20009.
5. Surapureddi, S., et al. 2002. Identification of a transcriptionally active peroxisome proliferator-activated receptor α -interacting cofactor complex in rat liver and characterization of PRIC285 as a coactivator. *Proc. Natl. Acad. Sci. USA* 99: 11836-11841.

CHROMOSOMAL LOCATION

Genetic locus: TGS1 (human) mapping to 8q12.1.

PRODUCT

PIMT 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see PIMT shRNA Plasmid (h): sc-45875-SH and PIMT shRNA (h) Lentiviral Particles: sc-45875-V as alternate gene silencing products.

For independent verification of PIMT (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-45875A, sc-45875B and sc-45875C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

PIMT siRNA (h) is recommended for the inhibition of PIMT 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 μ M in 66 μ l. 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 PIMT gene expression knockdown using RT-PCR Primer: PIMT (h)-PR: sc-45875-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Martinez, I., et al. 2017. An Exportin-1-dependent microRNA biogenesis pathway during human cell quiescence. *Proc. Natl. Acad. Sci. USA* 114: E4961-E4970.

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.