

# PRC siRNA (h): sc-90572

## BACKGROUND

PGC-1-related coactivator (PRC), also known as peroxisome proliferator-activated receptor  $\gamma$  coactivator-related protein 1, is a 1,664 amino acid nuclear protein. PRC is involved in the co-activation of nuclear genes involved in mitochondrial biogenesis and cell growth. PRC acts as a transcriptional coactivator of CREB-1 and NRF-1 by interacting directly with CREB-1 and NRF-1 genes. Upregulated by serum, PRC is present at high levels in skeletal muscle and heart and at moderate levels in kidney, spleen, thymus, intestine, placenta, lung, brain and colon. PRC has one RNA recognition motif (RRM) domain, which can bind directly to RNA. PRC exists as two named isoforms produced by alternative splicing.

## REFERENCES

- Andersson, U. and Scarpulla, R.C. 2001. Pgc-1-related coactivator, a novel, serum-inducible coactivator of nuclear respiratory factor 1-dependent transcription in mammalian cells. *Mol. Cell. Biol.* 21: 3738-3749.
- Savagner, F., et al. 2003. PGC-1-related coactivator and targets are upregulated in thyroid oncocyoma. *Biochem. Biophys. Res. Commun.* 310: 779-784.
- Finck, B.N. and Kelly, D.P. 2006. PGC-1 coactivators: inducible regulators of energy metabolism in health and disease. *J. Clin. Invest.* 116: 615-622.
- Vercauteren, K., et al. 2006. PGC-1-related coactivator: immediate early expression and characterization of a CREB/NRF-1 binding domain associated with cytochrome c promoter occupancy and respiratory growth. *Mol. Cell. Biol.* 26: 7409-7419.
- Rasouri, S., et al. 2007. SIRT1/PGC-1: a neuroprotective axis? *Med. Sci.* 23: 840-844.

## CHROMOSOMAL LOCATION

Genetic locus: PPRC1 (human) mapping to 10q24.32.

## PRODUCT

PRC 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see PRC shRNA Plasmid (h): sc-90572-SH and PRC shRNA (h) Lentiviral Particles: sc-90572-V as alternate gene silencing products.

For independent verification of PRC (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-90572A, sc-90572B and sc-90572C.

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

## APPLICATIONS

PRC siRNA (h) is recommended for the inhibition of PRC 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  $\mu$ M in 66  $\mu$ 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.

## GENE EXPRESSION MONITORING

PRC (B-8): sc-376431 is recommended as a control antibody for monitoring of PRC 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-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  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 PRC gene expression knockdown using RT-PCR Primer: PRC (h)-PR: sc-90572-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS

- Shi, D., et al. 2021. An isocaloric moderately high-fat diet extends lifespan in male rats and *Drosophila*. *Cell Metab.* 33: 581-597.e9.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.