SANTA CRUZ BIOTECHNOLOGY, INC.

# PGC-1α (H-300): sc-13067

SANTA CRUZ BIOTECHNOLOGY

*The Power to Question*

## BACKGROUND

Transcription factors exert their effects by associating with co-activator or corepressor proteins. The co-activator complexes are thought to be constitutively active, requiring only proper positioning in the genome to initiate transcription. Co-activators include the steroid receptor co-activator (SRC) and CREB binding protein (CBP) families that contain histone acetyltransferase (HAT) activity, which modifies chromatin structure. PPARγ co-activator-1 (PGC-1) is a transcriptional cofactor of nuclear respiratory factor-1 (NRF-1), PPARβ, PPARα and other nuclear receptors that is induced by exposure to cold temperatures and is involved in regulating thermogenic gene expression, protein uncoupling and mitochondrial biogenesis. PGC-1 has a low inherent transcriptional activity when it is not bound to a transcription factor. Docking of PGC-1 to PPARγ stimulates an apparent conformational change that then enables PGC-1 to bind to and assemble into complexes, which include the additional cofactors SRC-1 and CBP/p300, and results in a large increase in transcriptional activity.

## CHROMOSOMAL LOCATION

Genetic locus: PPARGC1A (human) mapping to 4p15.2; Ppargc1a (mouse) mapping to 5 C1.

## SOURCE

PGC-1α (H-300) is a rabbit polyclonal antibody raised against amino acids 1-300 mapping near the N-terminus of PGC-1α of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

PGC-1α (H-300) is recommended for detection of PGC-1α of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

PGC-1α (H-300) is also recommended for detection of PGC-1α in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for PGC-1α siRNA (h): sc-38884, PGC-1α siRNA (m): sc-38885, PGC-1α shRNA Plasmid (h): sc-38884-SH, PGC-1α shRNA Plasmid (m): sc-38885-SH, PGC-1α shRNA (h) Lentiviral Particles: sc-38884-V and PGC-1α shRNA (m) Lentiviral Particles: sc-38885-V.

Molecular Weight of PGC-1α: 90 kDa.

Positive Controls: MDA-MB-435S whole cell lysate: sc-364184, Hep G2 cell lysate: sc-2227 or DU 145 nuclear extract: sc-24960.

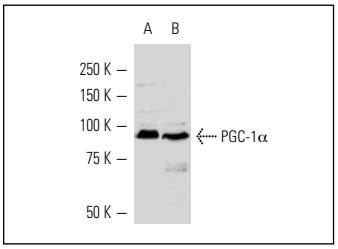
## STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

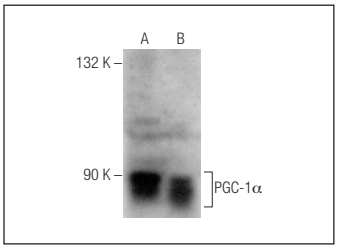
## RESEARCH USE

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

## DATA




PGC-1α (H-300): sc-13067. Western blot analysis of PGC-1α expression in DU 145 (**A**) and A-673 (**B**) nuclear extracts.




PGC-1α (H-300): sc-13067. Western blot analysis of PGC-1α expression in MDA-MB-435S (**A**) and Hep G2 (**B**) whole cell lysates.

## SELECT PRODUCT CITATIONS


1. Ide, T., et al. 2004. SREBPs suppress IRS-2-mediated Insulin signalling in the liver. Nat. Cell Biol. 6: 351-357.
2. Zhang, Y. 2004. Peroxisomal proliferator-activated receptor-γ coactivator-1α (PGC-1 α) enhances the thyroid hormone induction of carnitine palmitoyl-transferase I (CPT-I α). J. Biol. Chem. 279: 53963-53971.
3. Ghosh, S., et al. 2011. Altered glutathione homeostasis in heart augments cardiac lipotoxicity associated with diet-induced obesity in mice. J. Biol. Chem. 286: 42483-42493.
4. Krishnan, J., et al. 2012. Dietary obesity-associated Hif1α activation in adipocytes restricts fatty acid oxidation and energy expenditure via suppression of the Sirt2-NAD+ system. Genes Dev. 26: 259-270.
5. Koltai, E., et al. 2012. Age-associated declines in mitochondrial biogenesis and protein quality control factors are minimized by exercise training. Am. J. Physiol. Regul. Integr. Comp. Physiol. 303: R127-R134.
6. Vila-Bedmar, R., et al. 2012. GRK2 contribution to the regulation of energy expenditure and brown fat function. FASEB J. 26: 3503-3514.
7. Blättler, S.M., et al. 2012. Defective mitochondrial morphology and bioenergetic function in mice lacking the transcription factor Yin Yang 1 in skeletal muscle. Mol. Cell. Biol. 32: 3333-3346.
8. Pagliei, B., et al. 2013. Garlic-derived diallyl disulfide modulates peroxisome proliferator activated receptor γ co-activator 1 α in neuroblastoma cells. Biochem. Pharmacol. 85: 335-344.
9. Hart, N., et al. 2013. Resveratrol enhances exercise training responses in rats selectively bred for high running performance. Food Chem. Toxicol. 63: 51-59.