

Product Information

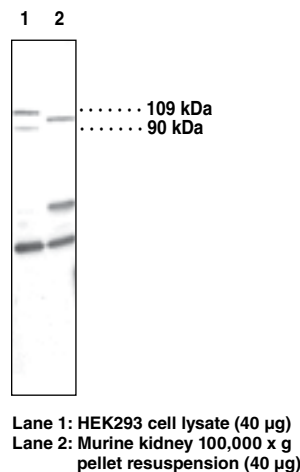


PGC-1 Polyclonal Antibody

Item No. 101707 • Lot No. XXXXXX

Synonyms:	Peroxisome Proliferator-activated Receptor γ Coactivator 1, PPAR γ Coactivator 1
Contents:	This vial contains (100-500 μ g of protein-A purified IgG, <i>lot specific</i>), lyophilized. Dissolve the vial contents in 500 μ l TBS, pH 7.4.
Host:	Rabbit
Antigen:	Human PGC-1 α amino acids 75-90; the antigen alignment with other known sequences is as follows: Human PGC-1 α NIFEKIDEENEANLLA Human PGC-1 β s e f f q I D s E N E A 1 L a e Mouse and rat PGC-1 β s e f f q I D s E N E A 1 L a A
Cross-reactivity:	(+) Human, mouse, rat PGC-1 α and PGC-1 β ; other species not tested
Stability:	≥ 2 years at -20°C
Applications:	The recommended starting dilution for western blot is 1:200 and 2 μ g/ml for immunohistochemistry (paraffin-embedded tissue sections). Other applications were not attempted and therefore optimal working dilutions should be determined empirically.
Concentration:	Varies by lot, from 0.2-1.0 mg/ml (100-500 μ g/vial). Always 100 μ l final working volume for western blotting.

Three peroxisome proliferator-activated receptor γ coactivator 1 (PGC-1) isoforms have been characterized - PGC-1 α , PGC-1 β , and PGC-1-related coactivator (PRC). PGC-1 α and PGC-1 β are products of two distinct genes with protein sequences sharing high homology at both the N- and C-terminus.¹ PGC-1 α is a tissue-specific and inducible transcriptional coactivator for several nuclear receptors and plays a key role in energy metabolism, hepatic gluconeogenesis, and cholesterol homeostasis.² PGC-1 β is also thought to activate oxidative metabolism in tissues, although it does so through a relatively restricted set of transcriptional partners compared to PGC-1 α . PGC-1 α is most abundant in kidney and heart whereas PGC-1 β is primarily expressed in heart, brown adipose, and skeletal muscle.^{3,4} Changes in PGC-1 α levels may play a role in metabolic disorders such as type II diabetes and obesity.⁵ Human PGC-1 α is 798 amino acids in length with a calculated molecular weight of 91 kDa. Cayman's PGC-1 polyclonal antibody detects the protein at around 96 kDa in mouse kidney and liver samples. In human liver microsomes and HEK293 cells, both PGC-1 α and PGC-1 β are detected.



Laboratory Procedures

Immunoperoxidase staining procedure

A. Paraffin sections

1. Deparaffinize sections 3 times with xylene or xylene substitute, 5 minutes each.
2. Rehydrate sections 2 times with 100% ethanol, 5 minutes each, followed by 95%, 90%, 80%, 70%, and 50% ethanol, 5 minutes each.
3. Rinse sections in distilled water for 5 minutes.
4. Block endogenous peroxidase activity with 0.3% H_2O_2 in water (use methanol instead of water in case of strong endogenous peroxidase activity) for 15 minutes.
5. Wash sections 3 times in TBS containing 0.1% Tween 20 (TBST), pH 7.4, 5 minutes each.
6. Incubate sections with 5% normal serum (same species as the host of the secondary antibody) for 30 minutes.
7. Rinse sections 3 times with TBST, pH 7.4, 5 minutes each.
8. Incubate sections with 2 μ g/ml PGC-1 polyclonal antibody (recommended starting dilution. Optimal dilution

WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY: NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

MATERIAL SAFETY DATA

This material should be considered hazardous until information to the contrary becomes available. Do not ingest, swallow, or inhale. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. This information contains some, but not all, of the information required for the safe and proper use of this material. Before use, the user must review the complete Material Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY

Cayman Chemical Company makes **no warranty or guarantee** of any kind, whether written or oral, expressed or implied, including without limitation, any warranty of fitness for a particular purpose, suitability and merchantability, which extends beyond the description of the chemicals hereof. Cayman **warrants only** to the original customer that the material will **meet our specifications at the time of delivery**.

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to be determined by end user) overnight at room temperature.

9. Wash sections 3 times in TBST, pH 7.4, 5 minutes each.
10. Incubate sections for 30 minutes with biotinylated secondary antibody, using a dilution as recommended by the provider.
11. Wash sections 3 times in TBST, pH 7.4, 5 minutes each.
12. Incubate sections for 30 minutes with ABC reagent, using a dilution as recommended by the provider.
13. Wash sections 3 times in TBST, pH 7.4, 5 minutes each.
14. Incubate sections in peroxidase substrate solution. Check staining under a microscope frequently. When desired staining intensity is achieved, rinse sections with distilled water thoroughly.
15. Counter stain sections if desired. Rinse sections thoroughly after counter stain.
16. Dehydrate sections through 50%, 70%, 80%, 90%, 95%, and 100% ethanol (2 times) for 5 minutes each.
17. Clear sections 3 times with xylene or xylene substitute, 5 minutes.
18. Mount sections with coverslips.

B. Fresh Frozen Sections

1. After briefly fixing sections with an appropriate fixative (e.g., 10% formaldehyde for 2 minutes), wash sections 3 times with TBS, pH 7.4, 5 minutes each.
2. Follow steps 4-18 of the procedure recommended for paraffin section.

References

1. Lin, J., Puigserver, P., Donovan, J., *et al.* Peroxisome proliferator-activated receptor γ coactivator 1 β (PGC-1 β), a novel PGC-1-related transcription coactivator associated with host cell factor. *J. Biol. Chem.* **277**(3), 1645-1648 (2002).
2. Lin, J., Handschin, C., and Spiegelman, B.M. Metabolic control through the PGC-1 family of transcription coactivators. *Cell Metabolism* **1**, 361-370 (2005).
3. Larrouy, D., Vidal, H., Andreelli, F., *et al.* Cloning and mRNA tissue distribution of human PPAR γ coactivator-1. *Int. J. Obes.* **23**, 1327-1332 (1999).
4. Meirhaeghe, A., Crowley, V., Lenaghan, C., *et al.* Characterization of the human, mouse, and rat PGC1 β (peroxisome-proliferator-activated receptor- γ co-activator 1 β) gene *in vitro* and *in vivo*. *J. Biochem.* **373**, 155-165 (2003).
5. Flier, J.S. Obesity wars: Molecular progress confronts an expanding epidemic. *Cell* **116**, 337-350 (2004).

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