

Product Information



PGC-1 Blocking Peptide

Catalog No. 301707

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 murine kidney and liver samples. In human liver microsomes and HEK293 cells, both PGC-1 α and PGC-1 β are detected.

Laboratory Procedures

This vial contains 200 μ g peptide in 200 μ l TBS, pH 7.4, containing 0.1% BSA and 0.02% sodium azide. The PGC-1 blocking peptide (PGC-1 α amino acids 75-90) can be used in conjunction with Cayman's PGC-1 Polyclonal Antibody (Catalog No. 101707) to block protein-antibody complex formation during immunochemical analysis of PGC-1.

Reconstitute the lyophilized peptide with 200 μ l of PBS or distilled water. Store this peptide solution at -20°C. It will be stable for at least two years. To block antibody/protein complex formation, the following procedure is recommended:

1. Mix the PGC-1 Polyclonal Antibody (Catalog No. 101707) and blocking peptide together in a 1:1 (v/v) ratio in a microfuge tube. For example, mix 20 μ l of antibody and 20 μ l of peptide.*
2. Incubate for 1 hour at room temperature with occasional mixing prior to further dilution and application of the mixture to the immunoblot.
3. Dilute the mixture to final working antibody concentration and apply to the slide or membrane as usual.

*This is a recommended mixture. The minimum amount of peptide needed for complete blocking has not been precisely determined and may vary depending on the sample being analyzed. The amount of peptide required may need to be increased if sufficient blocking does not occur.

References

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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).

Related Product

PGC-1 Polyclonal Antibody - Cat. No. 101707

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WARNING: THIS PRODUCT IS NOT INTENDED OR APPROVED FOR HUMAN OR VETERINARY USE. USE OF THIS PRODUCT FOR HUMAN OR ANIMAL TESTING IS EXTREMELY HAZARDOUS AND MAY RESULT IN DISEASE, SEVERE INJURY, OR DEATH.

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