

Product Information

Anti-PGC-1 α (N-terminal)

produced in rabbit, affinity isolated antibody

Product Number **SAB4200226**

Product Description

Anti-PGC-1 α (N-terminal) is produced in rabbit using as the immunogen a synthetic peptide corresponding to a sequence at the N-terminal of human PGC-1 α (GenelD 10891), conjugated to KLH. The corresponding sequence is identical in rat and mouse PGC-1 α . The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-PGC-1 α (N-terminal) specifically recognizes human PGC-1 α . The antibody can be used in several immunochemical techniques including immunoblotting (~120 kDa). Detection of the PGC-1 α band is specifically inhibited by the immunizing peptide.

PGC-1 α , also known as PPARGC1A, is a master transcriptional coactivator that integrates and regulates several metabolic pathways in response to external stimuli. PGC-1 α regulates adaptive thermogenesis in brown adipose tissue and insulin signaling in skeletal muscle by activation of central metabolic and energy-related genes.¹ PGC-1 α has a central role in the regulation of liver gluconeogenesis, β -oxidation of fatty acids, and ketogenesis, by coactivation of key enzymes in the metabolic pathway, indicating that PGC-1 α plays an important role as a global regulator of liver metabolism during fasting.²⁻⁵ PGC-1 α interacts with and coactivates a variety of nuclear receptors (NRs), such as the glucocorticoid receptor (GR), HNF4 α , and PPARs in various tissues.^{1,2} PGC-1 α is also a potent activator of mitochondrial biogenesis by coactivation of ERR α , NRF-1 and NRF-2. PGC-1 α has been shown to suppress the generation of ROS and neuro-degeneration by protecting neuronal cells from oxidative stress-mediated death.⁶ PGC-1 α knockout mice show increased sensitivity to damage by oxidative stress affecting neurons in the substantia nigra and hippocampus. Reductions in the expression levels of PGC-1 α in muscle has been implicated in the pathogenesis of type-2 diabetes.^{7,8} PGC-1 α has been recently proposed to control muscle plasticity, to suppress broad inflammatory response and mediate the beneficial aspects of exercise.⁸

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide.

Antibody concentration: ~1.0 mg/mL

Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

Store at -20 °C. For continuous use, store at 2–8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing, or storage in "frost-free" freezer, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilutions should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working concentration of 1-2 μ g/mL is recommended using extracts of HEK293-T cells expressing human PGC-1 α .

Note: In order to obtain best results in various techniques and preparations, it is recommended to determine optimal working dilutions by titration.

References

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5. Li, X., et al., *Nature*, **447**, 1012-1016 (2007).
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VS,ER,CS,KAA,PHC,MAM 07/19-1