

PGC-1 α (4A8): sc-517380

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 coactivator (SRC) and CREB binding protein (CBP) families that contain histone acetyltransferase (HAT) activity, which modifies chromatin structure. PPAR γ co-activator-1 (PGC-1) is a transcriptional cofactor of nuclear respiratory factor-1 (NRF-1), PPAR β , PPAR α 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 PPAR γ 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.

SOURCE

PGC-1 α (4A8) is a mouse monoclonal antibody raised against a recombinant protein corresponding to amino acids 689-798 of PGC-1 α of human origin.

PRODUCT

Each vial contains 100 μ g IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

PGC-1 α (4A8) is recommended for detection of PGC-1 α of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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

Molecular Weight of PGC-1 α 1: 115 kDa.

Molecular Weight of NT-PGC-1 α (NT(terminal)-PGC-1 α): 37 kDa.

Positive Controls: human heart extract: sc-363763 or human kidney extract: sc-363764.

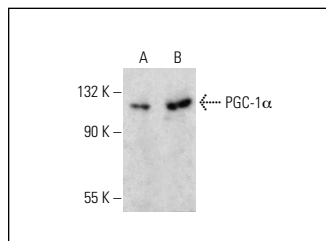
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

STORAGE

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

DATA



PGC-1 α (4A8): sc-517380. Western blot analysis of PGC-1 α expression in human heart (A) and human kidney (B) tissue extracts.

SELECT PRODUCT CITATIONS

1. Yue, L., et al. 2019. Silver nanoparticles inhibit beige fat function and promote adiposity. *Mol. Metab.* 22: 1-11.
2. Kim, M., et al. 2020. Sestrins are evolutionarily conserved mediators of exercise benefits. *Nat. Commun.* 11: 190.
3. Sun, X., et al. 2020. Neutralization of oxidized phospholipids ameliorates non-alcoholic steatohepatitis. *Cell Metab.* 31: 189-206.e8.
4. Xu, H.B., et al. 2020. Z-guggulsterone regulates MDR1 expression mainly through the pregnane X receptor-dependent manner in human brain microvessel endothelial cells. *Eur. J. Pharmacol.* 874: 173023.
5. Montecinos-Oliva, C., et al. 2020. Hormetic-like effects of L-homocysteine on synaptic structure, function, and A β aggregation. *Pharmaceuticals* 13: 24.
6. Xia, P.P., et al. 2020. Rac1 relieves neuronal injury induced by oxygen-glucose deprivation and re-oxygenation via regulation of mitochondrial biogenesis and function. *Neural Regen. Res.* 15: 1937-1946.
7. Tang, Q., et al. 2020. Sirt6 in pro-opiomelanocortin neurons controls energy metabolism by modulating leptin signaling. *Mol. Metab.* 37: 100994.
8. Mishra, P.S., et al. 2020. Transmission of ALS pathogenesis by the cerebrospinal fluid. *Acta Neuropathol. Commun.* 8: 65.
9. Alam, C., et al. 2020. Nuclear respiratory factor 1 (NRF-1) upregulates the expression and function of reduced folate carrier (RFC) at the blood-brain barrier. *FASEB J.* 34: 10516-10530.
10. Akashi, S., et al. 2021. *Citrus hassaku* extract powder increases mitochondrial content and oxidative muscle fibers by upregulation of PGC-1 α in skeletal muscle. *Nutrients* 13: 497.

RESEARCH USE

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