SANTA CRUZ BIOTECHNOLOGY, INC.

PGC-1α (P-19): sc-5815

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Transcription factors exert their effects by associating with coactivator or corepressor proteins. The coactivator complexes are thought to be constitutively active, requiring only proper positioning in the genome to initiate transcription. Coactivators include the steroid receptor coactivator (SRC) and CREB binding protein (CBP) families that contain histone acetyltransferase (HAT) activity, which modifies chromatin structure. PPAR γ coactivator-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; Ppargc1a (mouse) mapping to 5 C1.

SOURCE

PGC-1α (P-19) is an affinity purified goat polyclonal antibody raised against a peptide 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.

Blocking peptide available for competition studies, sc-5815 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

PGC-1α (P-19) 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), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (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 (P-19) 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 siRNA (r): sc-72151, PGC-1α shRNA Plasmid (h): sc-38884-SH, PGC-1α shRNA Plasmid (m): sc-38885-SH, PGC-1α shRNA Plasmid (r): sc-72151-SH, PGC-1α shRNA (h) Lentiviral Particles: sc-38884-V, PGC-1α shRNA (m) Lentiviral Particles: sc-38885-V and PGC-1α shRNA (r) Lentiviral Particles: sc-72151-V.

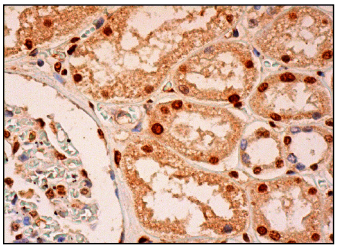
Molecular Weight of PGC-1α: 91 kDa.

Positive Controls: A-673 nuclear extract: sc-2128, HL-60 whole cell lysate: sc-2209 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.

DATA



PGC-1α (P-19): sc-5815. Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing nuclear staining of cells in glomeruli and nuclear and cytoplasmic staining of cells in tubules.

SELECT PRODUCT CITATIONS

1. Villena, J.A., et al. 2002. Mitochondrial biogenesis in brown adipose tissue is associated with differential expression of transcription regulatory factors. Cell. Mol. Life Sci. 59: 1934-1944.
2. Kawakami, Y., et al. 2005. Transcriptional coactivator PGC-1α regulates chondrogenesis via association with Sox9. Proc. Natl. Acad. Sci. USA 102: 2414-2419.
3. Wang, C., et al. 2006. Cyclin D1 repression of nuclear respiratory factor 1 integrates nuclear DNA synthesis and mitochondrial function. Proc. Natl. Acad. Sci. USA 103: 11567-11572.
4. Li, T., et al. 2006. Rifampicin induction of CYP3A4 requires pregnane X receptor cross talk with hepatocyte nuclear factor 4α and coactivators, and suppression of small heterodimer partner gene expression. Drug Metab. Dispos. 34: 756-764.
5. Song, K.H., et al. 2007. Hepatocyte growth factor signaling pathway inhibits cholesterol 7α-hydroxylase and bile acid synthesis in human hepatocytes. Hepatology 46: 1993-2002.
6. Subramaniam, V., et al. 2008. MITOCHIP assessment of differential gene expression in the skeletal muscle of Ant1 knockout mice: coordinate regulation of OXPHOS, antioxidant, and apoptotic genes. Biochim. Biophys. Acta 1777: 666-675.

RESEARCH USE

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