SANTA CRUZ BIOTECHNOLOGY, INC.

PGC-1β (6C3F6): sc-517279

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-1β (PGC-1β), also known as PERC or PPARGC1B, functions as a transcriptional activator for NRF-1 (nuclear respiratory factor-1), ERα (estrogen receptor α) and GR (glucocorticoid receptor). Through its interaction with various receptors, PGC-1β is involved in the regulation of mitochondrial biogenesis events such as energy expenditure and non-oxidative glucose metabolism. Expressed throughout the body with the highest expression in brain, heart and skeletal muscle, PGC-1β is induced by Insulin and repressed by saturated fatty acids. The gene encoding PGC-1β is polymorphic and variations in the expressed protein may contribute to the development of obesity.

REFERENCES

1. Kressler, D., et al. 2002. The PGC-1-related protein PERC is a selective coactivator of estrogen receptor α. J. Biol. Chem. 277: 13918-13925.
2. Huss, J.M., et al. 2002. Peroxisome proliferator-activated receptor coactivator-1α (PGC-1α) coactivates the cardiac-enriched nuclear receptors estrogen-related receptor-α and -γ. Identification of novel leucine-rich interaction motif within PGC-1α. J. Biol. Chem. 277: 40265-40274.
3. Shiraki, T., et al. 2003. Activation of orphan nuclear constitutive androstane receptor requires subnuclear targeting by peroxisome proliferator-activated receptor γ coactivator-1 α. A possible link between xenobiotic response and nutritional state. J. Biol. Chem. 278: 11344-11350.
4. Andersen, G., et al. 2005. Evidence of an association between genetic variation of the coactivator PGC-1β and obesity. J. Med. Genet. 42: 402-407.
5. Staiger, H., et al. 2005. Fatty acid-induced differential regulation of the genes encoding peroxisome proliferator-activated receptor-γ coactivator-1α and -1β in human skeletal muscle cells that have been differentiated *in vitro*. Diabetologia 48: 2115-2118.
6. Wirtenberger, M., et al. 2006. Associations of genetic variants in the estrogen receptor coactivators PPARGC1A, PPARGC1B and EP300 with familial breast cancer. Carcinogenesis 27: 2201-2208.
7. Hoeks, J., et al. 2006. Peroxisome proliferator-activated receptor-γ coactivator-1 and Insulin resistance: acute effect of fatty acids. Diabetologia 49: 2419-2426.
8. Handschin, C. and Spiegelman, B.M. 2006. Peroxisome proliferator-activated receptor γ coactivator 1 coactivators, energy homeostasis, and metabolism. Endocr. Rev. 27: 728-735.
9. Srivastava, S., et al. 2007. PGC-1α/β upregulation is associated with improved oxidative phosphorylation in cells harboring nonsense mtDNA mutations. Hum. Mol. Genet. 16: 993-1005.

CHROMOSOMAL LOCATION

Genetic locus: PPARGC1B (human) mapping to 5q32.

SOURCE

PGC-1β (6C3F6) is a mouse monoclonal antibody raised against a recombinant protein corresponding to amino acids 195-414 of PGC-1β of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PGC-1β (6C3F6) is available conjugated to agarose (sc-517279 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-517279 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-517279 PE), fluorescein (sc-517279 FITC), Alexa Fluor® 488 (sc-517279 AF488), Alexa Fluor® 546 (sc-517279 AF546), Alexa Fluor® 594 (sc-517279 AF594) or Alexa Fluor® 647 (sc-517279 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-517279 AF680) or Alexa Fluor® 790 (sc-517279 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

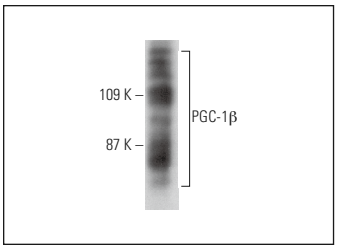
PGC-1β (6C3F6) is recommended for detection of PGC-1β of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], flow cytometry (1 µg per 1 x 10^6 cells) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for PGC-1β siRNA (h): sc-62783, PGC-1β shRNA Plasmid (h): sc-62783-SH and PGC-1β shRNA (h) Lentiviral Particles: sc-62783-V.

Molecular Weight of PGC-1β: 140 kDa.

Positive Controls: SW480 nuclear extract: sc-2155.

DATA



PGC-1β (6C3F6): sc-517279. Western blot analysis of PGC-1β expression in SW480 nuclear extract.

STORAGE

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

RESEARCH USE

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