SANTA CRUZ BIOTECHNOLOGY, INC.

PGC-1β (E-9): sc-373771

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.

CHROMOSOMAL LOCATION

Genetic locus: Ppargc1b (mouse) mapping to 18 E1.

SOURCE

PGC-1β (E-9) is a mouse monoclonal antibody raised against amino acids 452-593 mapping within an internal region of PGC-1β of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-373771 X, 200 µg/0.1 ml.

PGC-1β (E-9) is available conjugated to agarose (sc-373771 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-373771 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-373771 PE), fluorescein (sc-373771 FITC), Alexa Fluor® 488 (sc-373771 AF488), Alexa Fluor® 546 (sc-373771 AF546), Alexa Fluor® 594 (sc-373771 AF594) or Alexa Fluor® 647 (sc-373771 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-373771 AF680) or Alexa Fluor® 790 (sc-373771 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

PGC-1β (E-9) is recommended for detection of PGC-1β of mouse and rat origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for PGC-1β siRNA (m): sc-62784, PGC-1β shRNA Plasmid (m): sc-62784-SH and PGC-1β shRNA (m) Lentiviral Particles: sc-62784-V.

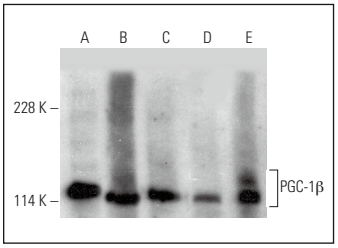
PGC-1β (E-9) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of PGC-1β: 113 kDa.

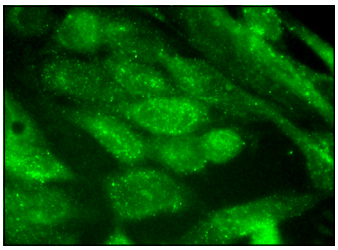
STORAGE

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

DATA



PGC-1β (E-9) HRP: sc-373771 HRP. Direct western blot analysis of PGC-1β expression in Sol8 (**A**) and KNRK (**B**) nuclear extracts, KNRK whole cell lysate (**C**) and rat brain (**D**) and mouse brain (**E**) tissue extracts.



PGC-1β (E-9): sc-373771. Immunofluorescence staining of methanol-fixed NIH/3T3 cells showing nuclear and cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Lee, I., et al. 2012. Deletion of heart-type cytochrome c oxidase subunit 7a1 impairs skeletal muscle angiogenesis and oxidative phosphorylation. J. Physiol. 590: 5231-5243.
2. Malek, M.H., et al. 2013. Similar skeletal muscle angiogenic and mitochondrial signalling following 8 weeks of endurance exercise in mice: discontinuous versus continuous training. Exp. Physiol. 98: 807-818.
3. Hénique, C., et al. 2015. Increasing mitochondrial muscle fatty acid oxidation induces skeletal muscle remodeling toward an oxidative phenotype. FASEB J. 29: 2473-2483.
4. Cao, L.L., et al. 2016. Control of mitochondrial function and cell growth by the atypical cadherin Fat1. Nature 539: 575-578.
5. Tyagi, E., et al. 2017. Loss of $p16^{INK4A}$ stimulates aberrant mitochondrial biogenesis through a Cdk4/Rb-independent pathway. Oncotarget 8: 55848-55862.
6. Kim, Y.R., et al. 2018. *Toxoplasma gondii* GRA8 induces ATP5A1-SIRT3-mediated mitochondrial metabolic resuscitation: a potential therapy for sepsis. Exp. Mol. Med. 50: e464.
7. Bandyopadhaya, A., et al. 2019. *Pseudomonas aeruginosa* quorum sensing molecule alters skeletal muscle protein homeostasis by perturbing the antioxidant defense system. MBio 10: e02211-19.
8. Zhao, L., et al. 2019. COX7A1 suppresses the viability of human non-small cell lung cancer cells via regulating autophagy. Cancer Med. 8: 7762-7773.
9. Kim, M., et al. 2020. Sestrins are evolutionarily conserved mediators of exercise benefits. Nat. Commun. 11: 190.

RESEARCH USE

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