abcam

ab77210

Anti-PGC1 alpha antibody [4A8]

Key facts

Isotype	IgG2b
Host species	Mouse
Storage buffer	pH: 7.4 Constituents: PBS, 8% Sodium chloride, 0.6% Disodium hydrogenorthophosphate, 0.2% Potassium chloride, 0.2% Potassium phosphate monobasic
Form	Liquid
Clonality	Monoclonal
Immunogen	Recombinant Fragment Protein within Human PPARGC1A aa 650-800. The exact immunogen used to generate this antibody is proprietary information. Database link Q9UBK2
Clone number	4A8
Purity	Tissue culture supernatant
Specificity	The immunogen sequence for this antibody is 55% homologous with PGC1 beta (Uniprot: Q86YN6).
Light chain type	kappa

Reactivity data

Flow Cyt

Tested

Species	Human
Dilution info	-

Notes	ab170192 - Mouse monoclonal IgG2b, is suitable for use as an isotype control with this antibody.

Not recommended

Species	Recombinant fragment - Human
Dilution info	-
Notes	-

WB

Tested

Species	Recombinant fragment - Human
Dilution info	-
Notes	-

Expected

Species	Human
Dilution info	Use at an assay dependent concentration.
Notes	-

Target data

See full target information PPARGC1A

Function

Transcriptional coactivator for steroid receptors and nuclear receptors (PubMed:10713165, PubMed:20005308, PubMed:21376232, PubMed:28363985, PubMed:32433991). Greatly increases the transcriptional activity of PPARG and thyroid hormone receptor on the uncoupling protein promoter (PubMed:10713165, PubMed:20005308, PubMed:21376232). Can regulate key mitochondrial genes that contribute to the program of adaptive thermogenesis (PubMed:10713165, PubMed:20005308, PubMed:21376232). Plays an essential role in metabolic reprogramming in response to dietary availability through coordination of the expression of a wide array of genes involved in glucose and fatty acid metabolism (PubMed:10713165, PubMed:20005308, PubMed:21376232). Acts as a key regulator of gluconeogenesis: stimulates hepatic gluconeogenesis by increasing the expression of gluconeogenic enzymes, and acting together with FOXO1 to promote the fasting gluconeogenic program (PubMed:16753578, PubMed:23142079). Induces the expression of PERM1 in the skeletal muscle in an ESRRA-dependent manner (PubMed:23836911). Also involved in the integration of

	the circadian rhythms and energy metabolism (By similarity). Required for oscillatory expression of clock genes, such as BMAL1 and NR1D1, through the coactivation of RORA and RORC, and metabolic genes, such as PDK4 and PEPCK (By similarity).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

This product was changed from ascites to tissue culture supernatant on 12/3/19. Please note that the dilutions may need to be adjusted accordingly. If you have any questions, please do not hesitate to contact our scientific support team.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	The protein PGC1 alpha also known as peroxisome proliferator-activated receptor gamma coactivator 1-alpha has a molecular weight of around 91 kDa. It functions mechanically as a transcription coactivator activating transcriptional protein pathways by binding to various transcription factors. It expresses in tissues with high energy demands notably in brown adipose tissue muscle liver heart and kidney. Scientists often investigate PGC1 alpha through various methods including PGC1 alpha Western blot analysis.
Biological function summary	PGC1 alpha plays a significant role in regulating genes involved in energy metabolism. This protein exists as part of larger transcription complexes interacting with nuclear receptors to control mitochondrial biogenesis and activity. It enhances oxidative phosphorylation and adaptive thermogenesis adapting to changes in energy balance. PGC1 alpha is also important in the regulation of blood pressure cholesterol homeostasis and fatty acid oxidation.
Pathways	PGC1 alpha interacts with several key metabolic pathways. It is involved in the regulation of the PPAR (peroxisome proliferator-activated receptor) pathway impacting both lipid metabolism and glucose homeostasis. Furthermore PGC1

	alpha influences the activity of transcription factors like NRF1 and NRF2 which play important roles in cellular energy homeostasis and response to oxidative stress.
Associated diseases and disorders	PGC1 alpha is linked to metabolic conditions such as type 2 diabetes and obesity. It interacts with proteins like PPAR gamma relevant in these metabolic disorders. Changes in PGC1 alpha expression or function can disrupt energy balance and mitochondrial function contributing to the pathophysiology of these diseases by impairing metabolic regulation and increasing susceptibility to insulin resistance.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

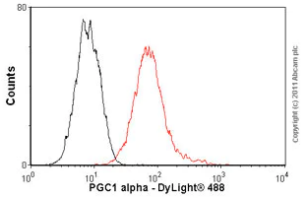
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

2 product images

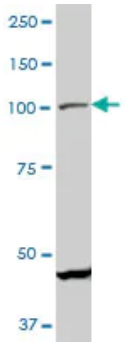


Flow Cytometry - Anti-PGC1 alpha antibody [4A8] (ab77210)

PGC1 alpha Flow Cytometry staining using mouse Anti-PGC1 alpha antibody

Overlay histogram showing HEK293 cells stained with ab77210 (red line). The cells were fixed with 80% methanol (5 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab77210, 1µg/1x10^6 cells) for 30 min at 22°C. The secondary antibody used was DyLight® 488 goat anti-mouse IgG (H+L) (ab96879) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was mouse IgG2b [PLPV219] (ab91366, 2µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed.

This antibody gave a positive signal in HEK293 cells fixed with 4% paraformaldehyde/permeabilized in 0.1% PBS-Tween used under the same conditions.
This image was generated using the ascites version of the product.



Western blot - Anti-PGC1 alpha antibody [4A8] (ab77210)

This image was generated using the ascites version of the product.
All lanes:
Western blot - Anti-PGC1 alpha antibody [4A8] (ab77210) at 1 µg/mL

All lanes:
PGC1 alpha transfected U2OS cell lysate at 25 µg

Secondary

All lanes:
Goat anti-Mouse IgG (H&L)-HRP at 1/2500 dilution

Developed using the ECL technique.

Predicted band size: 91 kDa

Observed band size: 45 kDa, 91 kDa

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.