Product Datasheet

PGC1 alpha Antibody
NBP1-04676

Unit Size: 0.1 ml

Store at 4C short term. Aliquot and store at -20C long term. Avoid freeze-thaw cycles.

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# NBP1-04676
PGC1 alpha Antibody

## Product Information

<table>
<thead>
<tr>
<th><strong>Unit Size</strong></th>
<th>0.1 ml</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Concentration</strong></td>
<td>1.0 mg/ml</td>
</tr>
<tr>
<td><strong>Storage</strong></td>
<td>Store at 4C short term. Aliquot and store at -20C long term. Avoid freeze-thaw cycles.</td>
</tr>
<tr>
<td><strong>Clonality</strong></td>
<td>Polyclonal</td>
</tr>
<tr>
<td><strong>Preservative</strong></td>
<td>0.02% Sodium Azide</td>
</tr>
<tr>
<td><strong>Isotype</strong></td>
<td>IgG</td>
</tr>
<tr>
<td><strong>Purity</strong></td>
<td>Immunogen affinity purified</td>
</tr>
<tr>
<td><strong>Buffer</strong></td>
<td>PBS</td>
</tr>
<tr>
<td><strong>Target Molecular Weight</strong></td>
<td>91 kDa</td>
</tr>
</tbody>
</table>

## Product Description

| **Host** | Rabbit |
| **Gene ID** | 10891 |
| **Gene Symbol** | PPARGC1A |
| **Species** | Human, Mouse, Rat, Porcine, Goat, Hamster, Squirrel |
| **Reactivity Notes** | Mouse reactivity reported in scientific literature (PMID:32857105). Goat reactivity reported in scientific literature (PMID: 31158446). |
| **Immunogen** | This PGC1 alpha Antibody was developed against a synthetic peptide made to an internal portion of the human PGC-1 alpha protein (within residues 400-550). [Swiss-Prot# Q9UBK2]. |

## Product Application Details

| **Applications** | Western Blot, Chromatin Immunoprecipitation, Flow Cytometry, Flow (Intracellular), Immunocytochemistry/Immunofluorescence, Immunohistochemistry, Immunohistochemistry-Frozen, Immunohistochemistry-Paraffin, Immunoprecipitation, Knockout Validated |
| **Recommended Dilutions** | Western Blot 1 - 2 ug/ml, Chromatin Immunoprecipitation, Flow Cytometry 1 - 2.5 ug/ml, Immunohistochemistry 1:10-1:500, Immunocytochemistry/Immunofluorescence 1:1000, Immunoprecipitation, Immunohistochemistry-Paraffin 1:200, Immunohistochemistry-Frozen, Flow (Intracellular) 1 - 2.5 ug/ml, Knockout Validated |
| **Application Notes** | In IHC-P, staining is very strong in the nucleus with some cytoplasmic staining. Prior to immunostaining paraffin tissues, antigen retrieval with sodium citrate buffer (pH 6.0) is recommended. Use in ICC reported in scientific literature (PMID: 24508229). Use in IP reported in scientific literature (PMID: 24769256). Use in IHC-Frozen reported in scientific literature (PMID: 25981953). ChIP data based on customer review. |
Immunocytochemistry/Immunofluorescence: PGC1 alpha Antibody [NBP1-04676] - HeLa cells were fixed in 4% paraformaldehyde for 10 minutes and permeabilized in 0.5% Triton X-100 in PBS for 5 minutes. The cells were incubated with anti-PGC1 alpha Antibody NBP1-04676 at 2 µg/ml overnight at 4C and detected with an anti-rabbit Dylight 488 (Green) at a 1:1000 dilution for 60 minutes. Nuclei were counterstained with DAPI (Blue). Cells were imaged using a 100X objective and digitally deconvolved.

Knockout Validated: PGC1 alpha Antibody [NBP1-04676] - Western blot shows lysates of A431 human squamous carcinoma parental cell line and PGC1 alpha knockout (KO) A431 cell line. PVDF membrane was probed with 1:1000 of Rabbit Polyclonal PGC1 alpha Antibody (Catalog # NBP1-04676) followed by HRP-conjugated Anti-Rabbit IgG Secondary Antibody (Catalog #HAF008). Specific band was detected for PGC1 alpha at approximately 105 kDa (as indicated) in the parental A431 cell line, but is not detectable in the knockout A431 cell line. This experiment was conducted under reducing conditions.

Western Blot: PGC1 alpha Antibody [NBP1-04676] - Total protein from human adipose and skeletal muscle tissue, HeLa and A431 cells lines was separated on a 7.5% gel by SDS-PAGE, transferred to PVDF membrane and blocked in 5% non-fat milk in TBST. The membrane was probed with 2.0 µg/mL PGC1 alpha Antibody (Molecular weight: 91 KDa) in 1% non-fat milk in TBST and detected with an anti-rabbit HRP secondary antibody using chemiluminescence.

Immunocytochemistry/Immunofluorescence: PGC1 alpha Antibody [NBP1-04676] - HeLa cells were fixed for 10 minutes using 10% formalin and then permeabilized for 5 minutes using 1X TBS + 0.5% Triton X-100. The cells were incubated with PGC1 alpha Antibody [NBP1-04676] at a 1:200 dilution overnight at 4C and detected with an anti-rabbit DyLight 488 (Green) at a 1:500 dilution. Alpha tubulin (DM1A) [NB100-690] was used as a co-stain at a 1:1000 dilution and detected with an anti-mouse DyLight 550 (Red) at a 1:500 dilution. Nuclei were counterstained with DAPI (Blue). Cells were imaged using a 40X objective.

Flow (Intracellular): PGC1 alpha Antibody [NBP1-04676] - An intracellular stain was performed on HepG2 cells with PGC1 alpha Antibody and a matched isotype control. Cells were fixed with 4% PFA and then permeabilized with 0.1% saponin. Cells were incubated in an antibody dilution of 2.5 ug/mL for 30 minutes at room temperature, followed by Rabbit IgG (H+L) Cross-Adsorbed Secondary Antibody.

Western Blot: PGC1 alpha Antibody [NBP1-04676] - Western Blot of total protein from murine skeletal muscle tissue using PGC1 alpha Antibody. Image from verified customer review.

Western Blot: PGC1 alpha Antibody [NBP1-04676] - Mitochondrial content and biogenesis. Immunoblot analysis of PGC1 alpha in MEFs (n = 7; t = 5.764; df = 6). Image collected and cropped by CiteAb from the following publication (http://www.nature.com/articles/s41598-017-12662-3), licensed under a CC-BY licence.
Immunohistochemistry-Paraffin: PGC1 alpha Antibody [NBP1-04676] - Analysis of a FFPE section of mouse prostate using rabbit polyclonal PGC1 alpha Antibody at 1:200 dilution. The antibody generated an expected strong nuclear (punctate in some cells) and a weak cytoplasmic staining in the glandular cells lining of tubule-alveolar gland.

Flow Cytometry: PGC1 alpha Antibody [NBP1-04676] - An intracellular stain was performed on A431 cells with PGC1 alpha Antibody NBP1-04676 (blue) and matched isotype control NBP2-24891 (orange). Cells were fixed with 4% PFA and then permeabilized with 0.1% saponin. Cells were incubated in an antibody dilution of 1.0 µg/mL for 30 minutes at room temperature, followed by Rabbit IgG (H+L) Cross-Adsorbed Secondary Antibody, Dylight 550 (SA5-10033, Thermo Fisher).

Flow (Intracellular): PGC1 alpha Antibody [NBP1-04676] - An intracellular stain was performed on HeLa cells with NBP1-04676AF647 (blue) and a matched isotype control (orange). Cells were fixed with 4% PFA and then permeabilized with 0.1% saponin. Cells were incubated in an antibody dilution of 2.5 µg/mL for 30 minutes at room temperature. Both antibodies were conjugated to Alexa Fluor 647.

Garcia-Puga M, Saenz-Antonanzas A et al. Myotonic Dystrophy type 1 cells display impaired metabolism and mitochondrial dysfunction that are reversed by metformin. Aging (Albany NY) Aug 4 2020 12:00AM [PMID: 32310829] (ICC/IF, WB, Human)

Van Laar V S, Arnold B et al. Evidence for Compartmentalized Axonal Mitochondrial Biogenesis: Mitochondrial DNA Replication Increases in Distal Axons As an Early Response to Parkinson’s Disease-Relevant Stress. J Neurosci Aug 22 2018 12:00AM [PMID: 30030401] (WB, Rat)

Mukherjee D, Chander V, Bandyopadhyay A PARIS-DJ-1 Interaction Regulates Mitochondrial Functions in Cardiomyocytes which is Critically Important in Cardiac Hypertrophy Mol Cell Biol Oct 19 2020 12:00AM [PMID: 33077496]


Mu MD, Qian ZM, Yang SX et al. Sigma-1 receptor regulates mitophagy in dopaminergic neurons and contributes to dopaminergic protection Cell Death Dis Oct 26 2020 12:00AM [PMID: 33116116]

Wen J, Li S, Zheng C et al. Tetramethylpyrazine nitrone improves motor dysfunction and pathological manifestations by activating the PGC-1 alpha/Nrf2/HO-1 pathway in ALS mice Neuropharmacology Nov 1 2020 12:00AM [PMID: 33152451] (WB, Mouse)


Meyers K, Lopez M, Ho J et al. Lipocalin-2 deficiency may predispose to the progression of spontaneous age-related adiposity in mice Sci Rep Sep 3 2020 12:00AM [PMID: 32883997]


TEgIAs T, AbrahAm D, JOkai M et al. Exercise combined with a probiotics treatment alters the microbiome, but moderately affects signalling pathways in the liver of male APP/PS1 transgenic mice Biogerontology Aug 18 2020 12:00AM [PMID: 32812166] (WB, Mouse)

More publications at http://www.novusbio.com/NBP1-04676
Procedures

Western Blot Protocol for PGC1 alpha Antibody (NBP1-04676)
PGC1 alpha Antibody: https://www.novusbio.com/products/pgc1-alpha-antibody_nbp1-04676
Western Blot Protocol

1. Perform SDS-PAGE on samples to be analyzed, loading 40 ug of total protein per lane.
2. Transfer proteins to membrane according to the instructions provided by the manufacturer of the membrane and transfer apparatus.
3. Stain according to standard Ponceau S procedure (or similar product) to assess transfer success, and mark molecular weight standards where appropriate.
4. Rinse the blot.
5. Block the membrane using standard blocking buffer for at least 1 hour.
6. Wash the membrane in wash buffer three times for 10 minutes each.
7. Dilute primary antibody in blocking buffer and incubate 1 hour at room temperature.
8. Wash the membrane in wash buffer three times for 10 minutes each.
9. Apply the diluted HRP conjugated secondary antibody in blocking buffer (as per manufacturers instructions) and incubate 1 hour at room temperature.
10. Wash the blot in wash buffer three times for 10 minutes each (this step can be repeated as required to reduce background).
11. Apply the detection reagent of choice in accordance with the manufacturers instructions.

Note: Tween-20 can be added to the blocking or antibody dilution buffer at a final concentration of 0.05-0.2%.

Immunohistochemistry-Paraffin Protocol for PGC1 alpha Antibody (NBP1-04676)
Immunohistochemistry-Paraffin Embedded Sections

Antigen Unmasking:
Bring slides to a boil in 10 mM sodium citrate buffer (pH 6.0) then maintain at a sub-boiling temperature for 10 minutes. Cool slides on bench-top for 30 minutes.

Staining:
1. Wash sections in deionized water three times for 5 minutes each.
2. Wash sections in wash buffer for 5 minutes.
3. Block each section with 100-400 ul blocking solution for 1 hour at room temperature.
4. Remove blocking solution and add 100-400 ul diluted primary antibody. Incubate overnight at 4 C.
5. Remove antibody solution and wash sections in wash buffer three times for 5 minutes each.
6. Add 100-400 ul biotinylated diluted secondary antibody. Incubate 30 minutes at room temperature.
7. Remove secondary antibody solution and wash sections three times with wash buffer for 5 minutes each.
8. Add 100-400 ul Streptavidin-HRP reagent to each section and incubate for 30 minutes at room temperature.
9. Wash sections three times in wash buffer for 5 minutes each.
10. Add 100-400 ul DAB substrate to each section and monitor staining closely.
11. As soon as the sections develop, immerse slides in deionized water.
12. Counterstain sections in hematoxylin.
13. Wash sections in deionized water two times for 5 minutes each.
14. Dehydrate sections.
15. Mount coverslips.

*The above information is only intended as a guide. The researcher should determine what protocol best meets their needs. Please follow safe laboratory procedures.
Limitations
This product is for research use only and is not approved for use in humans or in clinical diagnosis. Primary Antibodies are guaranteed for 1 year from date of receipt.

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