abcam

ab192876

Anti-PGM1 antibody [EPR15241]

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR15241
Purification technique	Affinity purification Protein A
Concentration	0.985 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Human
Dilution info	1/60
Notes	-

Expected

Species	Mouse
Dilution info	1/60
Notes	-

Species	Rat
Dilution info	1/60
Notes	-

WB

Tested

Species	Mouse
Dilution info	1/1000 - 1/10000
Notes	-

Species	Human
Dilution info	1/1000 - 1/10000
Notes	-

Expected

Species	Rat
Dilution info	1/1000 - 1/10000
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Expected

Species	Rat, Mouse
Dilution info	Use at an assay dependent concentration.
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/500
Notes	-

Expected

Species	Mouse
Dilution info	1/500
Notes	-

Predicted

Species	Rat
Dilution info	-
Notes	-

Target data

See full target information PGM1

Function	Catalyzes the reversible isomerization of alpha-D-glucose 1-phosphate to alpha-D-glucose 6-phosphate (PubMed:15378030, PubMed:25288802). The mechanism proceeds via the intermediate compound alpha-D-glucose 1,6-bisphosphate (Probable) (PubMed:25288802). This enzyme participates in both the breakdown and synthesis of glucose (PubMed:17924679, PubMed:25288802).

Storage

Shipped at conditions	Conditional Ambient

Appropriate short-term storage duration	1-2 weeks
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

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Supplementary info

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

Activity summary	The Protein PGM1 also known as phosphoglucomutase-1 plays a significant mechanical role in cellular glucose metabolism. It catalyzes the interconversion of glucose-1-phosphate and glucose-6-phosphate a critical step in the glycolysis and gluconeogenesis pathways. The PGM1 protein has a molecular mass of approximately 61 kDa. Its expression occurs in various tissues with high levels in muscle and liver tissues which are key sites for energy storage and utilization.
Biological function summary	PGM1 contributes significantly to both energy homeostasis and carbohydrate metabolism. It functions as part of a dynamic complex involving other enzymes that manage intracellular energy balance. PGM1 supports glycogen synthesis and breakdown by regulating the availability of glucose-1-phosphate. This dual role makes PGM1 an important protein for maintaining normal metabolic function. Its activity impacts cellular energy levels which is vital for muscle contraction and overall energy distribution in tissues.
Pathways	PGM1 is critically involved in carbohydrate metabolic pathways specifically glycolysis and gluconeogenesis. In glycolysis it participates in converting glucose

	for energy production. In gluconeogenesis it assists in the generation of glucose from non-carbohydrate substrates. PGM1 interacts closely with other enzymes in these pathways such as glucose-6-phosphate dehydrogenase ensuring efficient energy regulation and metabolic flow within the cell.
Associated diseases and disorders	PGM1 is associated with glycogen storage disease type XIV which is a condition causing improper glycogen metabolism. Mutations in the PGM1 gene disrupt its enzymatic function leading to symptoms like muscle pain and weakness. Additionally PGM1 defects can impact another protein phosphoglucomutase-3 (PGM3) which shares pathway similarities and potentially affects the synthesis of other phosphorylated sugars related to immune function. These connections highlight the importance of functional PGM1 in maintaining normal physiological and disease-free states.

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

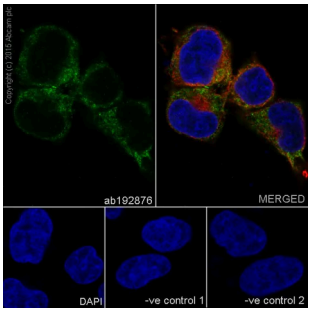
We do not recommend this combination. It is not covered by our product promise.

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.

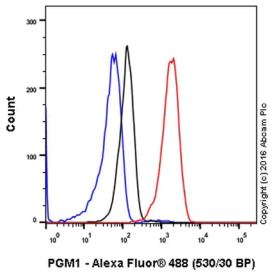
6 product images



Immunocytochemistry/ Immunofluorescence - Anti-PGM1 antibody [EPR15241] (ab192876)

PGM1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-PGM1 antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed 0.1% tritonX-100 permeabilized HeLa cells labeling PGM1 with ab192876 at 1/500 dilution followed by Goat anti rabbit IgG (AlexaFluor® 488) (ab150077) secondary antibody at 1/400 dilution. Nuclear counter stain is DAPI (blue).

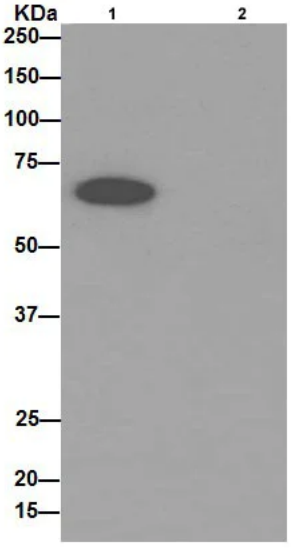


Flow Cytometry (Intracellular) - Anti-PGM1 antibody [EPR15241] (ab192876)

PGM1 Flow Cytometry (Intracellular) staining using rabbit Anti-PGM1 antibody

ab192876 staining PGM1 in A549 (human lung carcinoma) by intracellular flow cytometry. Cells were fixed with 4% paraformaldehyde and permeabilised with 90% methanol. The sample was incubated with the primary antibody at a dilution of 1/90. A goat anti rabbit IgG (Alexa Fluor® 488) at a dilution of 1/2000 was used as the secondary antibody.
Isoytype control: Rabbit monoclonal IgG (Black)

Unlabelled control: Cell without incubation with primary antibody and secondary antibody (Blue)

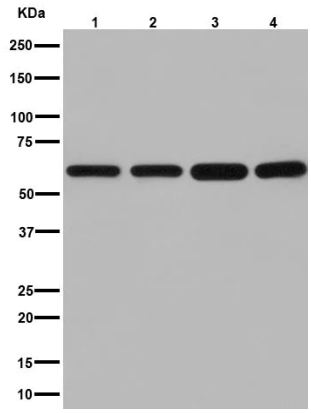


Immunoprecipitation - Anti-PGM1 antibody [EPR15241] (ab192876)

Western blot analysis of PGM1 immunoprecipitated from Human fetal liver lysate with ab192876 at 1/60 dilution. Lane 1: Human fetal liver lysate. Lane 2: PBS instead of Human fetal liver lysate. Secondary: Anti-Rabbit IgG (HRP), specific to the non-reduced form of IgG at 1/1500 dilution. Blocking/Dilution buffer: 5% NFDM/TBST.

All lanes:
Immunoprecipitation - Anti-PGM1 antibody [EPR15241] (ab192876)

Predicted band size: 61 kDa



Western blot - Anti-PGM1 antibody [EPR15241] (ab192876)

Blocking/Dilution buffer: 5% NFDM/TBST.
All lanes:
Western blot - Anti-PGM1 antibody [EPR15241] (ab192876) at 1/10000 dilution

Lane 1:
HepG2 cell lysate at 20 µg

Lane 2:
293T cell lysate at 20 µg

Lane 3:
Human fetal liver lysate at 20 µg

Lane 4:

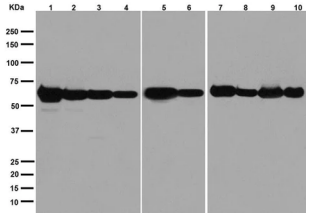
Human fetal heart lysate at 20 µg

Secondary

All lanes:
Anti-Rabbit IgG (HRP), specific to the non-reduced form of IgG at 1/1000 dilution

Predicted band size: 61 kDa

Observed band size: 61 kDa



Western blot - Anti-PGM1 antibody [EPR15241] (ab192876)

Blocking/Dilution buffer: 5% NFDM/TBST.
All lanes:
Western blot - Anti-PGM1 antibody [EPR15241] (ab192876) at 1/1000 dilution

Lane 1:
Mouse brain tissue lysate at 10 µg

Lane 2:
Mouse heart tissue lysate at 10 µg

Lane 3:
Mouse kidney tissue lysate at 10 µg

Lane 4:
Mouse spleen tissue lysate at 10 µg

Lane 5:
Rat kidney tissue lysate at 10 µg

Lane 6:
Rat spleen tissue lysate at 10 µg

Lane 7:
C6 cell lysate at 10 µg

Lane 8:
RAW 264.7 cell lysate at 10 µg

Lane 9:
PC12 cell lysate at 10 µg

Lane 10:
NIH/3T3 cell lysate at 10 µg

Secondary

All lanes:
Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugate at 1/1000 dilution

Predicted band size: 61 kDa

Observed band size: 61 kDa

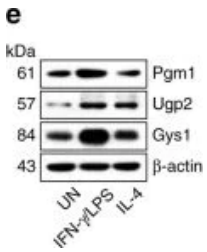


Image collected and cropped by CiteAb under a CC-BY license from the publication

Western blot - Anti-PGM1 antibody [EPR15241] (ab192876)

PGM1 Western blot staining using rabbit Anti-PGM1 antibody

PGM1 western blot using anti-PGM1 antibody [EPR15241] ab192876. Publication image and figure legend from Ma, J., Wei, K., et al., 2020, Nat Commun, PubMed 32286295.

ab192876 was used in this publication in western blot. This may not be the same as the application(s) guaranteed by Abcam. For a full list of applications guaranteed by Abcam for ab192876 please see the product overview.

Glycogen is synthesized in inflammatory macrophages.a–c Intracellular glycogen levels in untreated, IFN-γ/LPS (20 ng mL-1 IFN-γ plus 100 ng mL-1 LPS) or IL-4 (10 ng mL-1) treated BMDMs were detected and observed by PAS staining (scale bar, 20 μm) (a), colorimetric assay (b) and TEM (scale bar, 0.5 μm) (c). The arrows point to intracellular glycogen deposits. d, e Pgm1, Ugp2, and Gys1 expression in untreated, IFN-γ/LPS or IL-4 treated BMDMs were determined by real-time PCR (d) and western blot (e). f Overview of three glucose metabolic pathways: glycogen metabolism (left), glycolysis (middle) and PPP (right) and the inhibitors (GPI/6AN) are shown. g–i BMDMs differentiated in normal 12C-glucose were stimulated with IFN-γ/LPS or IL-4 for 6 h and switched to 13C-glucose for 6 h, LC-MS/MS was performed for m + 6-labeled G6P/G1P (g), m + 6-labeled UDPG (h) and m + 3-labeled G6P/G1P (i). j, k Pck1, Fbp1, and G6pase expression in untreated, IFN-γ/LPS or IL-4 treated BMDMs were determined by real-time PCR (j) and western blot (k). l Consumption of glucose in untreated, IFN-γ/LPS or IL-4 treated BMDMs were measured by enzymatic methods. m Relative mRNA expression of Slc2a1/2 and Hk1/2/3 in untreated, IFN-γ/LPS or IL-4 treated BMDMs were determined by real-time PCR. n, oHk1/2/3, Pgm1 or Gys1 siRNA transfected BMDMs were stimulated with IFN-γ/LPS for 36 h. Intracellular glycogen levels were detected by colorimetric assay. Unless otherwise specified, n = 3 biologically independent experiments were performed. Data are presented as mean ± SEM. P values were calculated using one-way ANOVA, ****p < 0.0001.

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