abcam

ab240349

Anti-PGK1 antibody [EPR19057] - BSA and Azide free

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR19057
Purification technique	Affinity purification Protein A
Concentration	1.007 - 1.038 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Expected

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

Notes	-

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information PGK1

Function	Catalyzes one of the two ATP producing reactions in the glycolytic pathway via the reversible conversion of 1,3-diphosphoglycerate to 3-phosphoglycerate (PubMed:30323285, PubMed:7391028). Both L- and D- forms of purine and pyrimidine nucleotides can be used as substrates, but the activity is much lower on

pyrimidines (PubMed:18463139). In addition to its role as a glycolytic enzyme, it seems that PGK1 acts as a polymerase alpha cofactor protein (primer recognition protein) (PubMed:2324090). Acts as a protein kinase when localized to the mitochondrion where it phosphorylates pyruvate dehydrogenase kinase PDK1 to inhibit pyruvate dehydrogenase complex activity and suppress the formation of acetyl-coenzyme A from pyruvate, and consequently inhibit oxidative phosphorylation and promote glycolysis (PubMed:26942675, PubMed:36849569). May play a role in sperm motility (PubMed:26677959).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

ab240349 is the carrier-free version of ab199438.

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.

Conjugation ready
Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility
This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

Supplementary info

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

Activity summary	PGK1 also known as phosphoglycerate kinase-1 is an enzyme involved in glycolysis with a mass of approximately 45 kDa. PGK1 catalyzes the reversible transfer of a phosphate group from 13-bisphosphoglycerate to ADP forming 3-phosphoglycerate and ATP. This enzyme is expressed ubiquitously across various tissues with significant roles in energy metabolism. In yeast it is referred to simply as phosphoglycerate kinase where its function in cellular respiration is widely studied.
Biological function summary	The PGK1 protein plays an essential role in energy production by participating in the glycolytic pathway. This enzyme functions independently and is not part of any complex. By converting 13-bisphosphoglycerate to 3-phosphoglycerate it supports cellular processes that require ATP. Such activity facilitates the high energy needs of cells ensuring proper cellular function and homeostasis.
Pathways	The enzyme PGK1 operates predominantly within the glycolytic and gluconeogenesis pathways. Throughout glycolysis it partners with enzymes like phosphofructokinase and pyruvate kinase facilitating the breakdown of glucose into pyruvate while generating ATP. In gluconeogenesis PGK1 aids in glucose formation which helps balance energy dynamics particularly in tissues like the liver and kidney.
Associated diseases and disorders	PGK1 has associations with tumor growth and proliferation in various cancers. Its elevated expression is often found in tumors linking it to oncogenesis due to the increased demand for glycolytic activity. Additionally mutations in PGK1 can result in phosphoglycerate kinase deficiency a disorder affecting red blood cell metabolism. This links it to related proteins involved in managing metabolic pathways of energy production in affected tissues.

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

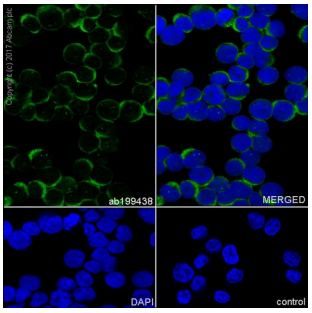
We do not recommend this combination. It is not covered by our product promise.

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.

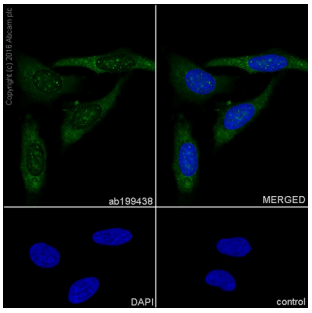
4 product images



Immunocytochemistry/ Immunofluorescence - Anti-PGK1 antibody [EPR19057] - BSA and Azide free (ab240349)

PGK1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-PGK1 antibody

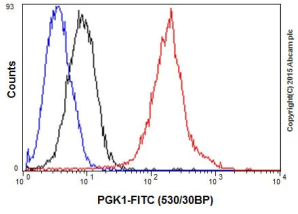
Immunofluorescent analysis of 100% methanol-fixed Jurkat (human T cell leukemia cell line from peripheral blood) cells labeling PGK1 with ab199438 at 1/250 dilution, followed by Goat anti-rabbit IgG (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green). Confocal image showing cytoplasmic and weak nuclear staining in Jurkat cells. The nuclear counterstain is DAPI (blue).
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab199438).



Immunocytochemistry/ Immunofluorescence - Anti-PGK1 antibody [EPR19057] - BSA and Azide free (ab240349)

PGK1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-PGK1 antibody

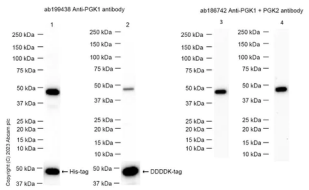
Immunofluorescent analysis of 100% methanol-fixed HeLa (human epithelial cell line from cervix adenocarcinoma) cells labeling PGK1 with ab199438 at 1/250 dilution, followed by Goat anti-rabbit IgG (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green). Confocal image showing cytoplasmic and weak nuclear staining in HeLa cells. The nuclear counterstain is DAPI (blue).
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab199438).



Flow Cytometry (Intracellular) - Anti-PGK1 antibody [EPR19057] - BSA and Azide free (ab240349)

PGK1 Flow Cytometry (Intracellular) staining using rabbit Anti-PGK1 antibody

Intracellular flow cytometric analysis of 4% paraformaldehyde-fixed HeLa (Human epithelial cells from cervix adenocarcinoma) cells labeling PGK1 with ab199438 at 1/150 dilution (red) compared with a rabbit monoclonal IgG isotype control (ab172730; black) and an unlabelled control (cells without incubation with primary antibody and secondary antibody; blue). Goat anti rabbit IgG (FITC) at 1/500 dilution was used as the secondary antibody.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab199438).



Western blot - Anti-PGK1 antibody [EPR19057] - BSA and Azide free (ab240349)

Blocking and Diluting Buffer: 5% NFDM/TBST Lanes 3 and 4 Exposure: 60 seconds This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab199438).
Lanes 1 - 2:
Western blot - Anti-PGK1 antibody [EPR19057] (ab199438) at 1/1000 dilution

Lanes 3 - 4:
Western blot - Anti-PGK1 + PGK2 antibody [EPR14908] (ab186742) at 1/5000 dilution

Lanes 1 and 3:
PGK1 Human Recombinant Protein at 20 µg

Lanes 2 and 4:
PGK2 Human Recombinant Protein at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Predicted band size: 45 kDa

Exposure time: 5s

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