abcam

ab250896

Anti-PGK1 + PGK2 antibody [EPR14908] - 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	EPR14908

Reactivity data

WB

Tested

Species	Rat, Mouse, Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

ab250896 is the carrier-free version of ab186742.

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	Phosphoglycerate kinase 1 (PGK1) and phosphoglycerate kinase 2 (PGK2) are enzymes involved in glycolytic processes. PGK1 also known as PGKA has a molecular mass of approximately 45 kDa and is widely expressed in most tissues especially in those requiring high energy. PGK2 alternatively known as testis-specific PGK has a similar molecular mass of about 45 kDa and is mainly expressed in the testis. Both enzymes ensure the important step of catalyzing the transfer of a phosphate group from 13-bisphosphoglycerate to ADP forming 3-phosphoglycerate and ATP.
Biological function summary	Phosphoglycerate kinase 1 and 2 are important for cellular energy production and metabolic homeostasis. PGK1 plays a role in maintaining general cellular energy needs especially in environments with fluctuating oxygen levels. PGK2 as a testis-specific isoform supports spermatogenesis by facilitating glycolysis important for sperm motility. Both enzymes do not form part of a larger enzymatic complex functioning as standalone entities in their respective pathways.
Pathways	Phosphoglycerate kinases participate in the glycolytic pathway which is essential for glucose catabolism and ATP generation. Within glycolysis PGK1 and PGK2 work with other glycolytic enzymes such as hexokinase and pyruvate kinase. Both enzymes help balance cellular redox states through their action in redox and energy production pathways intimately linked to other metabolic states such as those found in oxidative phosphorylation.

Associated diseases and disorders	Overactivity of PGK1 has associations with cancer where altered glycolytic activity supports rapid tumor growth. Its partner proteins like HIF-1α help mediate these changes in cancer metabolism. Additionally PGK2 deficiency can result in male infertility due to its indispensable role in sperm energy metabolism. There is no prominent disease linked partner for PGK2 outside its glycolytic function within testis tissue.

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

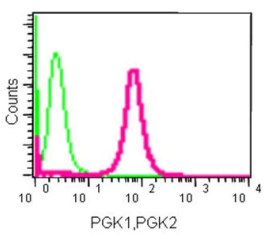
We do not recommend this combination. It is not covered by our product promise.

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.

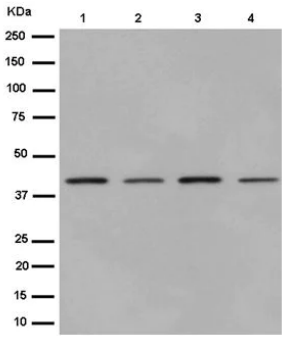
4 product images



Flow Cytometry (Intracellular) - Anti-PGK1 + PGK2 antibody [EPR14908] - BSA and Azide free (ab250896)

PGK1 + PGK2 Flow Cytometry (Intracellular) staining using rabbit Anti-PGK1 + PGK2 antibody

This data was developed using ab186742, the same antibody clone in a different buffer formulation.
Intracellular flow cytometric analysis of 2% paraformaldehyde fixed Jurkat cells labeling PGK1 with ab186742 at 1/100 dilution (red) compared with a rabbit monoclonal IgG isotype control (green). Goat anti rabbit IgG (FITC) at 1/150 dilution was used as the secondary antibody.



Western blot - Anti-PGK1 + PGK2 antibody [EPR14908] - BSA and Azide free (ab250896)

PGK1 + PGK2 Western blot staining using rabbit Anti-PGK1 + PGK2 antibody

This data was developed using ab186742, the same antibody clone in a different buffer formulation.
All lanes:
Western blot - Anti-PGK1 + PGK2 antibody [EPR14908] (ab186742) at 1/20000 dilution

Lane 1:
Jurkat cell lysate at 20 µg

Lane 2:
Human testis cell lysate at 20 µg

Lane 3:
HepG2 cell lysate at 20 µg

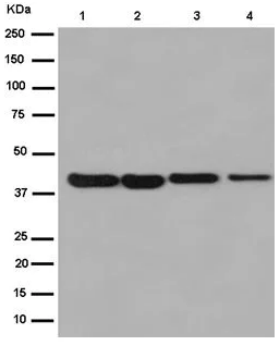
Lane 4:
HeLa cell lysate at 20 µg

Secondary

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

Predicted band size: 45 kDa

Observed band size: 45 kDa



Western blot - Anti-PGK1 + PGK2 antibody [EPR14908] - BSA and Azide free (ab250896)

This data was developed using ab186742, the same antibody clone in a different buffer formulation.
All lanes:
Western blot - Anti-PGK1 + PGK2 antibody [EPR14908] (ab186742) at 1/5000 dilution

Lane 1:
C6 cell lysate at 10 µg

Lane 2:
Raw264.7 cell lysate at 10 µg

Lane 3:
PC-12 cell lysate at 10 µg

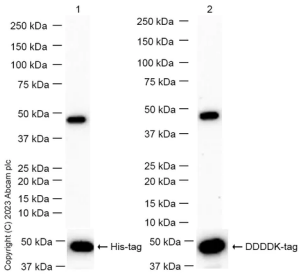
Lane 4:
NIH 3T3 cell lysate at 10 µg

Secondary

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

Predicted band size: 45 kDa

Observed band size: 45 kDa



Western blot - Anti-PGK1 + PGK2 antibody [EPR14908] - BSA and Azide free (ab250896)

Blocking and Diluting Buffer: 5% NFDM/TBST This data was developed using ab186742, the same antibody clone in a different buffer formulation.
All lanes:
Western blot - Anti-PGK1 + PGK2 antibody [EPR14908] (ab186742) at 1/5000 dilution

Lane 1:
PGK1 Human Recombinant Protein at 20 µg

Lane 2:
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: 60s

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