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PGK1 Antibody (Center)
Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP7094b

Specification

PGK1 Antibody (Center) - Product Information

Application	**IHC-P, WB, FC, IF,E**
Primary Accession	P00558
Other Accession	P16617, P09411, Q60HD8, P00559
Reactivity	**Human**
Predicted	**Horse, Monkey, Mouse, Rat**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**Rabbit IgG**
Antigen Region	**117-145**

PGK1 Antibody (Center) - Additional Information

Gene ID 5230

Other Names
Phosphoglycerate kinase 1, Cell migration-inducing gene 10 protein, Primer recognition protein 2, PRP 2, PGK1, PGKA

Target/Specificity
This PGK1 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 117-145 amino acids from the Central region of human PGK1.

Dilution
IHC-P~~1:100
WB~~1:1000
FC~~1:10~50
IF~~1:10~50
E~~Use at an assay dependent concentration.

Format
Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.

Storage
Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions
PGK1 Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

PGK1 Antibody (Center) - Protein Information

Name PGK1

Synonyms PGKA

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).

Cellular Location
Cytoplasm, cytosol. Mitochondrion matrix. Note=Hypoxic conditions promote mitochondrial targeting (PubMed:26942675). Targeted to the mitochondrion following phosphorylation by MAPK1/ERK2, cis-trans isomerization by PIN1, and binding to mitochondrial circRNA mcPGK1 (PubMed:36849569).

Tissue Location
Mainly expressed in spermatogonia. Localized on the principle piece in the sperm (at protein level). Expression significantly decreased in the testis of elderly men

PGK1 Antibody (Center) - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

PGK1 Antibody (Center) - Images

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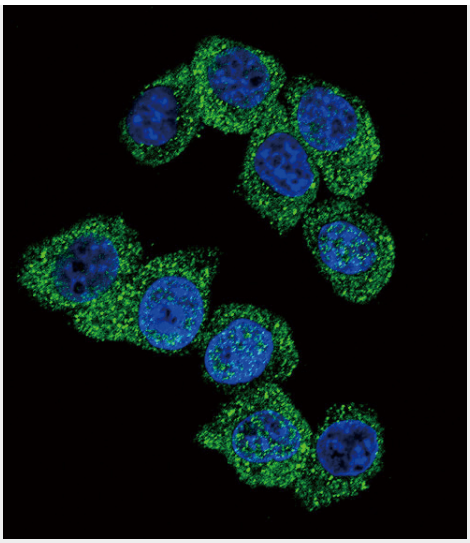
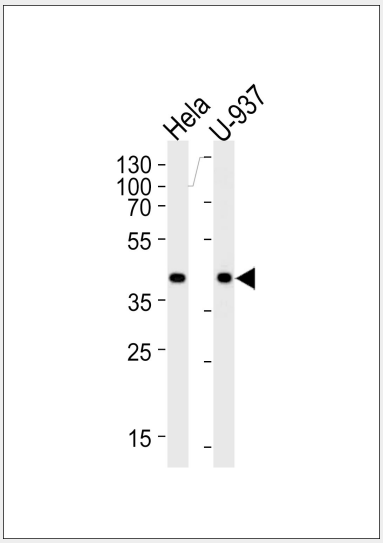


Confocal immunofluorescent analysis of PGK1 Antibody (Center)(Cat#AP7094b) with Hela cell followed by Alexa Fluor 488-conjugated goat anti-rabbit IgG (green).DAPI was used to stain the cell nuclear (blue).



Western blot analysis of lysates from Hela, U-937 cell line (from left to right), using PGK1 Antibody (G132)(Cat. #AP7094b). AP7094b was diluted at 1:1000 at each lane. A goat anti-rabbit IgG H&L(HRP) at 1:5000 dilution was used as the secondary antibody. Lysates at 35ug per lane.

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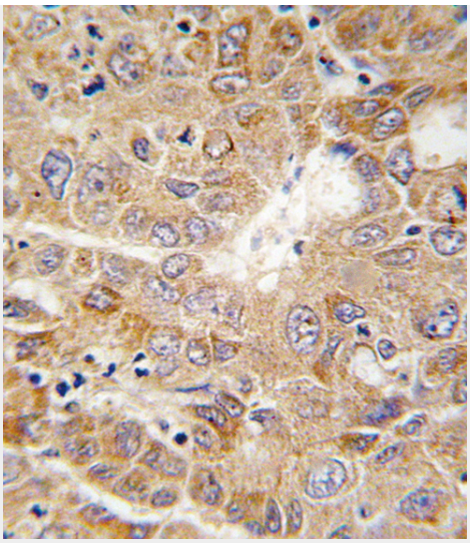
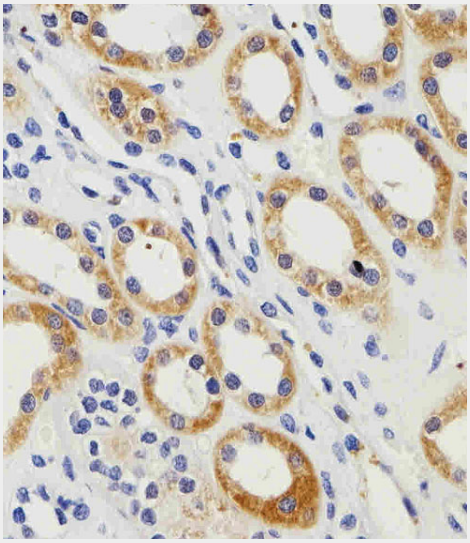


Formalin-fixed and paraffin-embedded human hepatocarcinoma tissue reacted with PGK1 antibody (Center), which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated.



Immunohistochemical analysis of paraffin-embedded H. kidney section using PGK1 Antibody (Center)(Cat#AP7094b). AP7094b was diluted at 1:100 dilution. A peroxidase-conjugated goat anti-rabbit IgG at 1:400 dilution was used as the secondary antibody, followed by DAB staining.

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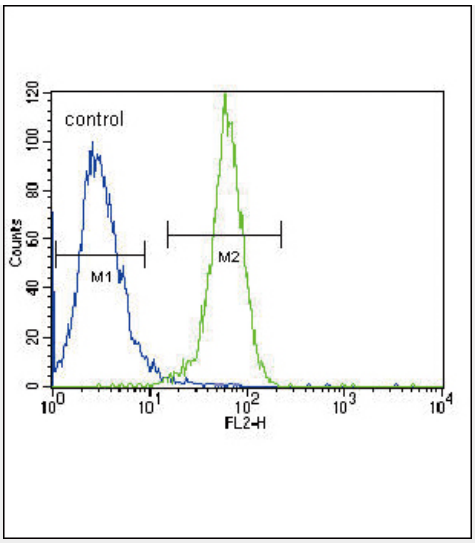

PGK1 Antibody (Center) (Cat. #AP7094b) flow cytometric analysis of Hela cells (right histogram) compared to a negative control cell (left histogram).FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.

PGK1 Antibody (Center) - Background

Also known as ATP:3-phosphoglycerate 1-phosphotransferase (EC 2.7.2.3), this major enzyme in glycolysis catalyzes the reversible conversion of 1,3-diphosphoglycerate to 3-phosphoglycerate, generating one molecule of ATP. New blood vessel formation or angiogenesis is critical for tumor expansion and metastasis. Lay et al. (2000) showed that the plasmin reductase isolated from conditioned medium of fibrosarcoma cells is the glycolytic enzyme phosphoglycerate kinase. They concluded that phosphoglycerate kinase not only functions in glycolysis but is secreted by tumor cells and participates in the angiogenic process as a disulfide reductase.

PGK1 Antibody (Center) - References

Lay, A. J., et al. Nature 408: 869-873 (2000).

PGK1 Antibody (Center) - Citations

- O-GlcNAcylation of PGK1 coordinates glycolysis and TCA cycle to promote tumor growth
- The effect of 3-bromopyruvate on human colorectal cancer cells is dependent on glucose concentration but not hexokinase II expression.
- Antrodia cinnamomea Inhibits Migration in Human Hepatocellular Carcinoma Cells.
- Cigarette smoking exposure alters pebp1 DNA methylation and protein profile involved in MAPK signaling pathway in mice testis.
- Phosphoglycerate kinase 2 (PGK2) is essential for sperm function and male fertility in mice.
- Opposite pathobiochemical fate of pyruvate kinase and adenylate kinase in aged rat skeletal muscle as revealed by proteomic DIGE analysis.
- Proteomic profiling reveals a severely perturbed protein expression pattern in aged skeletal muscle.
- Role of hypoxia inducible factor-1 alpha in modulation of apoptosis resistance.
- Parkinson's disease-associated mutations in leucine-rich repeat kinase 2 augment kinase activity.