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PGK1 Antibody (Center S320)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AW5171

Product Information

Application	IHC-P, WB
Primary Accession	P00558
Other Accession	Q60HD8, Q5J7W1
Reactivity	Human, Mouse
Predicted	Rat, Monkey
Host	Rabbit
Clonality	Polyclonal
Calculated MW	44615
Isotype	Rabbit IgG
Antigen Source	HUMAN

Additional Information

Gene ID	5230
Antigen Region	305-334
Other Names	PGK1; PGKA; Phosphoglycerate kinase 1; Cell migration-inducing gene 10 protein; Primer recognition protein 2
Dilution	IHC-P~~1:100~500 WB~~1:1000
Target/Specificity	This PGK1 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 305-334 amino acids from the Central region of human PGK1.
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 S320) is for research use only and not for use in diagnostic or therapeutic procedures.

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

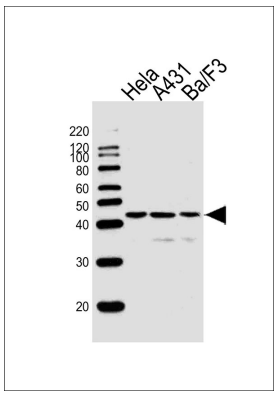
Background

Also known as ATP:3-phosphoglycerate 1-phosphotransferase, this major enzyme in glycolysis catalyzes the reversible conversion of 1,3-diphosphoglycerate to 3-phosphoglycerate, generating one molecule of ATP. Phosphoglycerate kinase not only functions in glycolysis but is secreted by tumor cells and is proposed to participate in the angiogenic process as a disulfide reductase. Mutations in PGK1 may be associated with hemolytic anemia.

References

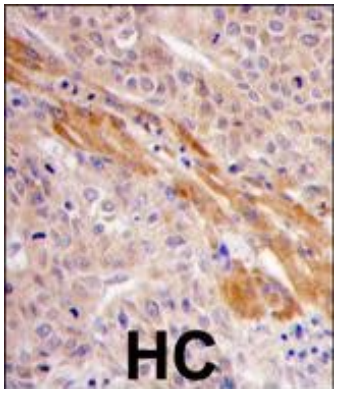
Shetty, S., et al., Am. J. Respir. Cell Mol. Biol. 31(1):100-106 (2004).
Daly, E.B., et al., Biochim. Biophys. Acta 1691(1):17-22 (2004).
Daly, E.B., et al., Int. J. Biol. Markers 19(2):170-172 (2004).
Saito, Y., et al., Biochem. Biophys. Res. Commun. 314(2):396-402 (2004).
Krishnan, P., et al., J. Biol. Chem. 278(38):36726-36732 (2003).

Images



Western blot analysis of lysates from Hela,A431,mouse Ba/F3 cell line (from left to right), using PGK1 Antibody (S320)(Cat. #AW5171). AW5171 was diluted at 1:1000 at each lane. A goat anti-rabbit IgG H&L(HRP) at 1:10000 dilution was used as the secondary antibody.Lysates at 20ug per lane.

Formalin-fixed and paraffin-embedded human hepatocarcinoma tissue reacted with PGK1 Antibody



(Center S320)(Cat.#AW5171), 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.