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PFKL Antibody (C-term L684)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP8136B

Product Information

Application	WB, IHC-P, E
Primary Accession	P17858
Reactivity	Human, Mouse
Predicted	Rat, Canine, Chicken
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	85018
Antigen Region	669-699

Additional Information

Gene ID	5211
Other Names	ATP-dependent 6-phosphofructokinase, liver type {ECO:0000255|HAMAP-Rule:MF_03184}, ATP-PFK {ECO:0000255|HAMAP-Rule:MF_03184}, PFK-L, 27111 {ECO:0000255|HAMAP-Rule:MF_03184}, 6-phosphofructokinase type B, Phosphofructo-1-kinase isozyme B, PFK-B, Phosphohexokinase {ECO:0000255|HAMAP-Rule:MF_03184}, PFKL
Target/Specificity	This PFKL antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 669-699 amino acids from the C-terminal region of human PFKL.
Dilution	WB~~1:1000 IHC-P~~1:100~500 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	PFKL Antibody (C-term L684) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	PFKL (HGNC:8876)

Function	Catalyzes the phosphorylation of D-fructose 6-phosphate to fructose 1,6-bisphosphate by ATP, the first committing step of glycolysis (PubMed:22923583). Negatively regulates the phagocyte oxidative burst in response to bacterial infection by controlling cellular NADPH biosynthesis and NADPH oxidase-derived reactive oxygen species. Upon macrophage activation, drives the metabolic switch toward glycolysis, thus preventing glucose turnover that produces NADPH via pentose phosphate pathway (By similarity).
Cellular Location	Cytoplasm {ECO:0000255|HAMAP-Rule:MF_03184}.

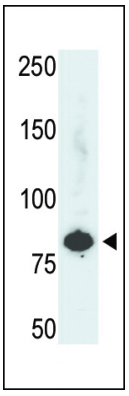
Background

Phosphofructokinase (PFK), a major regulatory enzyme in all cells of the body, catalyzes the metabolism of sugar, and thereby is pivotal in the production of energy to maintain normal cell function. In human there are three structural loci controlling PFK: M (muscle), L (liver), and P (platelet) type subunits, which are variably expressed in different tissues; human diploid fibroblasts and leukocytes express all three genes. PFK, a tetramer formed by the random association of the products of two separate gene loci to form the five possible tetramers. PFKs of muscle and liver are homotetramers of the M and L subunits, respectively. Red cells have all five isozymes: M4, M3L, M2L2, ML3, and L4. PFK is an allosteric enzyme activated by ADP, AMP, or fructose bisphosphate and inhibited by ATP or citrate. PFK catalyzes the key controlling step of glycolytic pathway. PFK deficiency can present as mild to life-threatening episodic illness. A hallmark sign of this disease is intermittent dark urine, with the color of the urine ranging from orange to dark coffee-brown, which commonly develops following strenuous exercise. The mean red cell PFK is elevated in persons with Down syndrome.

References

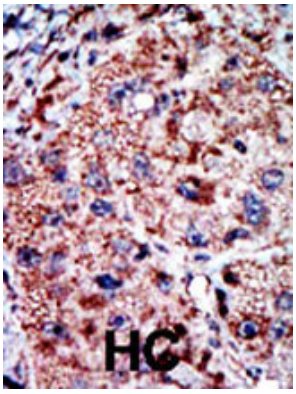
Strausberg, R.L., et al., Proc. Natl. Acad. Sci. U.S.A. 99(26):16899-16903 (2002).
Hattori, M., et al., Nature 405(6784):311-319 (2000).
Elson, A., et al., Genomics 7(1):47-56 (1990).
Levanon, D., et al., DNA 8(10):733-743 (1989).

Images



The anti-PFKL Pab (Cat. #AP8136b) is used in Western blot to detect PFKL in HepG2 cell lysate.

Formalin-fixed and paraffin-embedded human cancer tissue reacted with the primary antibody, which was peroxidase-conjugated to the secondary antibody, followed by AEC staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated. BC = breast carcinoma; HC = hepatocarcinoma.



Citations

- Senescence-inducing stress promotes proteolysis of phosphoglycerate mutase via ubiquitin ligase Mdm2.

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