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PFKFB3 Antibody (N-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP8145a

Product Information

Application	WB, IHC-P, E
Primary Accession	Q16875
Other Accession	O35552
Reactivity	Human, Mouse
Predicted	Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB04028
Calculated MW	59609
Antigen Region	1-30

Additional Information

Gene ID	5209
Other Names	6-phosphofructo-2-kinase/fructose-2, 6-bisphosphatase 3, 6PF-2-K/Fru-2, 6-P2ase 3, PFK/FBPase 3, 6PF-2-K/Fru-2, 6-P2ase brain/placenta-type isozyme, Renal carcinoma antigen NY-REN-56, iPFK-2, 6-phosphofructo-2-kinase, Fructose-2, 6-bisphosphatase, PFKFB3
Target/Specificity	This PFKFB3 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 1-30 amino acids from the N-terminal region of human PFKFB3.
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	PFKFB3 Antibody (N-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	PFKFB3

Function	Catalyzes both the synthesis and degradation of fructose 2,6- bisphosphate.
Tissue Location	Ubiquitous.

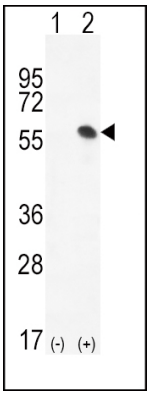
Background

PFKFB (6-phosphofructo-2-kinase/fructose-2,6-bisphosphatase) is a bifunctional enzyme, having both kinase and phosphatase activities residing on the same enzyme subunit but having distinct active sites. PFKFB regulates the steady-state concentration of fructose-2,6-bisphosphate, a potent activator of a key regulatory enzyme of glycolysis, phosphofructokinase. To date, four PFKFB isozymes (PFKFB 1-4) have been described, which show differences in their tissue distribution and kinetic properties in response to allosteric effectors and hormonal signals. Among the PFKFB's PFKFB3 has the highest kinase:phosphatase ratio, in part because it lacks the characteristic serine phosphorylation site near the N-terminal that down-modulates kinase activity. PFKFB3 was first described in the rapidly growing placenta. The glucolitic rate in placenta is accelerated by anoxia and by maternal diabetes. Cancer cells maintain a high glycolytic rate even in the presence of oxygen, a phenomenon known as the Warburg effect. The glycolytic rate in the placenta, another fast-growing tissue, is accelerated by anoxia and by maternal diabetes.

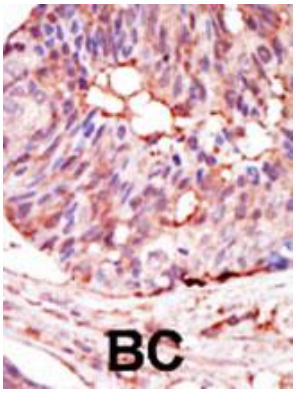
References

Navarro-Sabate, A., et al., Gene 264(1):131-138 (2001).
Chesney, J., et al., Proc. Natl. Acad. Sci. U.S.A. 96(6):3047-3052 (1999).
Sakakibara, R., et al., J. Biochem. 122(1):122-128 (1997).
Hamilton, J.A., et al., Mol. Endocrinol. 11(4):490-502 (1997).
Sakai, A., et al., J. Biochem. 119(3):506-511 (1996).

Images



Western blot analysis of PFKFB3 (arrow) using rabbit polyclonal hPFKFB3-K12 (Cat. #AP8145a). 293 cell lysates (2 ug/lane) either nontransfected (Lane 1) or transiently transfected (Lane 2) with the PFKFB3 gene.



Formalin-fixed and paraffin-embedded human cancer tissue reacted with the primary antibody, 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. BC = breast carcinoma; HC = hepatocarcinoma.

Citations

- Kinome Screen Identifies PFKFB3 and Glucose Metabolism as Important Regulators of the Insulin/Insulin-like Growth Factor (IGF)-1 Signaling Pathway.