10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

Anti-PCK1 Antibody

Rabbit polyclonal antibody to PCK1
Catalog # AP60359

Product Information

Application	WB
Primary Accession	P35558
Other Accession	Q9Z2V4
Reactivity	Human, Mouse, Rat, Monkey
Host	Rabbit
Clonality	Polyclonal
Calculated MW	69195

Additional Information

Gene ID	5105
Other Names	PEPCK1; Phosphoenolpyruvate carboxykinase, cytosolic [GTP]; PEPCK-C
Target/Specificity	KLH-conjugated synthetic peptide encompassing a sequence within the center region of human PCK1. The exact sequence is proprietary.
Dilution	WB~~WB (1/500 - 1/1000)
Format	Liquid in 0.42% Potassium phosphate, 0.87% Sodium chloride, pH 7.3, 30% glycerol, and 0.09% (W/V) sodium azide.
Storage	Store at -20 °C.Stable for 12 months from date of receipt

Protein Information

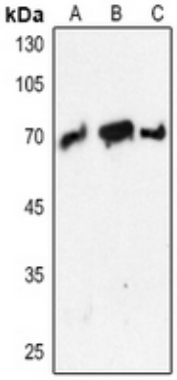
Name	PCK1 {ECO:0000303|PubMed:8490617, ECO:0000312|HGNC:HGNC:8724}
Function	Cytosolic phosphoenolpyruvate carboxykinase that catalyzes the reversible decarboxylation and phosphorylation of oxaloacetate (OAA) and acts as the rate-limiting enzyme in gluconeogenesis (PubMed:24863970, PubMed:26971250, PubMed:28216384, PubMed:30193097). Regulates cataplerosis and anaplerosis, the processes that control the levels of metabolic intermediates in the citric acid cycle (PubMed:24863970, PubMed:26971250, PubMed:28216384, PubMed:30193097). At low glucose levels, it catalyzes the cataplerotic conversion of oxaloacetate to phosphoenolpyruvate (PEP), the rate-limiting step in the metabolic pathway that produces glucose from lactate and other precursors derived from the citric acid cycle (PubMed:30193097). At high glucose levels, it catalyzes the anaplerotic conversion of phosphoenolpyruvate to oxaloacetate (PubMed:30193097). Acts as a regulator of formation and maintenance of memory CD8(+) T-cells: up- regulated in these cells, where it generates

	phosphoenolpyruvate, via gluconeogenesis (By similarity). The resultant phosphoenolpyruvate flows to glycogen and pentose phosphate pathway, which is essential for memory CD8(+) T-cells homeostasis (By similarity). In addition to the phosphoenolpyruvate carboxykinase activity, also acts as a protein kinase when phosphorylated at Ser-90: phosphorylation at Ser-90 by AKT1 reduces the binding affinity to oxaloacetate and promotes an atypical serine protein kinase activity using GTP as donor (PubMed:32322062). The protein kinase activity regulates lipogenesis: upon phosphorylation at Ser-90, translocates to the endoplasmic reticulum and catalyzes phosphorylation of INSIG proteins (INSIG1 and INSIG2), thereby disrupting the interaction between INSIG proteins and SCAP and promoting nuclear translocation of SREBP proteins (SREBF1/SREBP1 or SREBF2/SREBP2) and subsequent transcription of downstream lipogenesis- related genes (PubMed:32322062).
Cellular Location	Cytoplasm, cytosol. Endoplasmic reticulum Note=Phosphorylation at Ser-90 promotes translocation to the endoplasmic reticulum.
Tissue Location	Major sites of expression are liver, kidney and adipocytes.

Background

KLH-conjugated synthetic peptide encompassing a sequence within the center region of human PCK1. The exact sequence is proprietary.

Images



Western blot analysis of PCK1 expression in H446 (A), rat kidney (B), rat testis (C) whole cell lysates.