

PCK1 Antibody
Rabbit Polyclonal Antibody
Catalog # ALS17156**Specification**

PCK1 Antibody - Product Information

Application	IHC-P
Primary Accession	P35558
Other Accession	5105
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	69195

PCK1 Antibody - Additional Information**Gene ID** 5105**Other Names**

PCK1, PEPCKC, Phosphopyruvate carboxylase, PEP carboxykinase, PEPCK-C, PEPCK1

Target/Specificity

Human PCK1

Reconstitution & Storage

PBS, pH 7.4, 0.03% Proclin 300, 50% glycerol. Long term: -20°C; Short term: +4°C. Avoid repeat freeze-thaw cycles.

Precautions

PCK1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

PCK1 Antibody - 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:30193097, PubMed:24863970, PubMed:26971250, PubMed:28216384). Regulates cataplerosis and anaplerosis, the processes that control the levels of metabolic intermediates in the citric acid cycle (PubMed:30193097, PubMed:24863970, PubMed:26971250, PubMed:28216384).

[28216384](http://www.uniprot.org/citations/28216384)). 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](http://www.uniprot.org/citations/30193097)). At high glucose levels, it catalyzes the anaplerotic conversion of phosphoenolpyruvate to oxaloacetate (PubMed: [30193097](http://www.uniprot.org/citations/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](http://www.uniprot.org/citations/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](http://www.uniprot.org/citations/32322062)).

Cellular Location

Cytoplasm, cytosol. Endoplasmic reticulum Note=Phosphorylation at Ser-90 promotes translocation to the endoplasmic reticulum.

Tissue Location

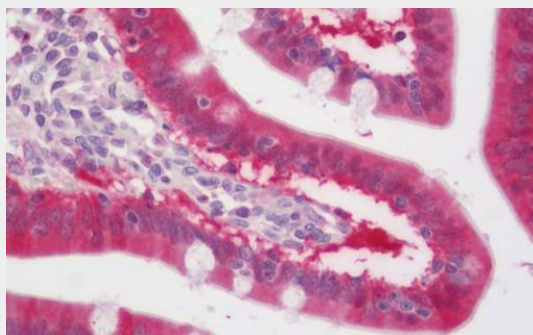
Major sites of expression are liver, kidney and adipocytes.

PCK1 Antibody - Protocols

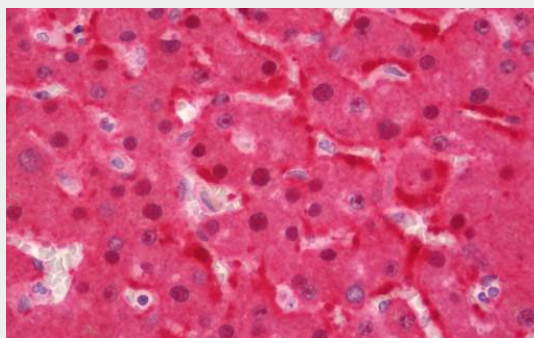
Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

PCK1 Antibody - Images



Human Small Intestine: Formalin-Fixed, Paraffin-Embedded (FFPE)



Human Liver: Formalin-Fixed, Paraffin-Embedded (FFPE)

PCK1 Antibody - Background

Catalyzes the conversion of oxaloacetate (OAA) 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.

PCK1 Antibody - References

Stoffel M.,et al.Hum. Mol. Genet. 2:1-4(1993).
Ting C.-N.,et al.Genomics 16:698-706(1993).
Ota T.,et al.Nat. Genet. 36:40-45(2004).
Deloukas P.,et al.Nature 414:865-871(2001).
Mural R.J.,et al.Submitted (SEP-2005) to the EMBL/GenBank/DDBJ databases.