

PCK1 (Phospho-Ser90) Antibody

Catalog No: #58006

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Description

Product Name	PCK1 (Phospho-Ser90) Antibody
Host Species	Rabbit
Clonality	Polyclonal
Isotype	IgG
Purification	The antibody was affinity-purified from rabbit antiserum by affinity-chromatography using epitope-specific phosphopeptide. The antibody against non-phosphopeptide was removed by chromatography using non-phosphopeptide corresponding to the phosphorylation site.
Applications	WB, IHC
Species Reactivity	Hu
Specificity	PCK1 (Phospho-Ser90) antibody detects endogenous levels of PCK1 only when phosphorylated at serine 90.
Immunogen Description	The antiserum was produced against synthesized phosphopeptide derived from Human PCK1 around the phosphorylation site of serine 90.
Accession No.	Swiss-Prot#: P35558 NCBI Gene ID: 5105
Calculated MW	70kDa
Formulation	Rabbit IgG in phosphate buffered saline (without Mg ²⁺ and Ca ²⁺), pH 7.4, 150mM NaCl, 0.02% sodium azide.
Storage	Store at -20° 1 year

Application Details

WB dilution: 1:500-1:1000

IHC dilution: 1:50-100

Background

Phosphoenolpyruvate carboxykinase (PCK) is the rate-limiting enzyme of gluconeogenesis in the liver and kidney and converts oxaloacetate and GTP into phosphoenolpyruvate (PEP) and CO₂ by adding a phosphate to pyruvate with concomitant aldol cleavage of CO₂ from oxaloacetate 1,2. In humans, cytosolic PCK1 shares 63.4% sequence identity with PCK2, which is located in the mitochondria 3. Aberrant PCK expression occurs in many cancers. For instance, PCK1 is overexpressed in melanoma and colorectal cancer, and PCK2 is highly expressed in breast, colon and lung cancer cells 4-8. In a recent study, it is reported that AKT in tumor cells phosphorylates cytosolic phosphoenolpyruvate carboxykinase 1 (PCK1) at S909. Phosphorylated PCK1 translocates to the ER, where PCK1 uses GTP as a phosphate donor to phosphorylate Insig1 S207 and Insig2 S151. This phosphorylation reduces the binding of sterol to Insig1/2 and disrupts Insig-SCAP interaction, leading to SCAP/SREBP1 translocation to the Golgi apparatus and subsequent SREBP1 activation and downstream gene transcription for lipogenesis, tumor cell proliferation, and tumorigenesis in mice 9.

Published Papers

el et., Prognostic Impact of PCK1 Protein Kinase Activity-Dependent Nuclear SREBP1 Activation in Non-Small-Cell Lung Carcinoma. In Front Oncol on 2021 Mar 26 by Fei Shao, Xueli Bian, et al. PMID:33842305, (2021)

[PMID:33842305](https://pubmed.ncbi.nlm.nih.gov/33842305/)

Note: This product is for in vitro research use only and is not intended for use in humans or animals.