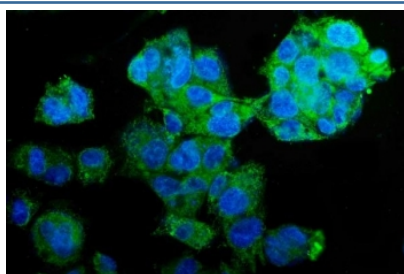


PEPCK2 Antibody / PEPCK-M Antibody [clone 3F7] (RQ6225)

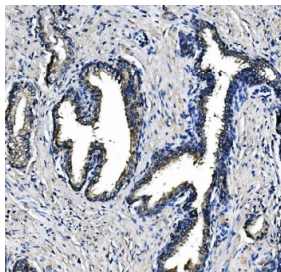
Catalog No.	Formulation	Size
RQ6225	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

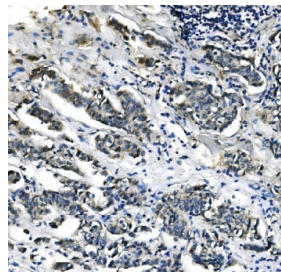
Availability	1-3 business days
Species Reactivity	Human, Mouse, Rat, Monkey
Format	Antigen affinity purified
Host	Mouse
Clonality	Monoclonal (mouse origin)
Isotype	Mouse IgG2b
Clone Name	3F7
Purity	Affinity purified
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	Q16822
Applications	Western Blot : 1-2ug/ml Immunohistochemistry (FFPE) : 2-5ug/ml Immunofluorescence : 5ug/ml Flow Cytometry : 1-3ug/million cells
Limitations	This PEPCK2 Antibody / PEPCK-M Antibody is available for research use only.



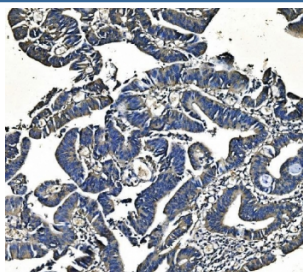
PEPCK2 Antibody HepG2 Liver Cancer Cell IF. PEPCK2 was detected in formalin-fixed, paraffin-embedded human HepG2 liver cancer cells following heat-induced epitope retrieval by steaming in citrate buffer, pH 6.0, for 20 minutes. Immunofluorescent staining with PEPCK2 antibody clone 3F7 shows the target protein in green, while nuclei were counterstained with DAPI and appear blue. The predominantly granular cytoplasmic staining pattern is consistent with the mitochondrial localization of PEPCK2. This PEPCK2 Antibody, also described as a PEPCK-M Antibody, supports studies of mitochondrial carbon metabolism and metabolic adaptation in liver cancer cells.



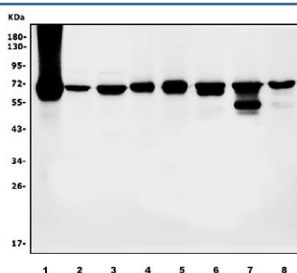
PEPCK2 Antibody Human Prostate Cancer IHC. PEPCK2 was detected in a formalin-fixed, paraffin-embedded section of human prostate cancer tissue. Heat-induced epitope retrieval was performed by boiling the section in EDTA buffer, pH 8.0, for 20 minutes followed by cooling before staining with PEPCK2 antibody clone 3F7. Brown chromogenic signal is primarily localized to the cytoplasm of malignant glandular epithelial cells, with limited staining in the surrounding stromal tissue. This PEPCK2 Antibody, also described as a PEPCK-M Antibody, supports studies of mitochondrial carbon metabolism and metabolic adaptation in prostate cancer.



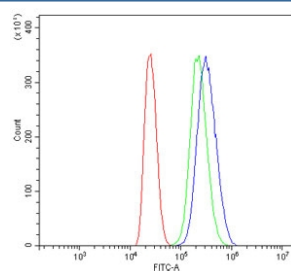
PEPCK2 Antibody Human Breast Cancer IHC. PEPCK2 was detected in a formalin-fixed, paraffin-embedded section of human breast cancer tissue. Heat-induced epitope retrieval was performed by boiling the section in EDTA buffer, pH 8.0, for 20 minutes followed by cooling before staining with PEPCK2 antibody clone 3F7. Brown chromogenic signal is visible in the cytoplasm of malignant breast epithelial cells, with variable staining intensity across the tumor and limited stromal reactivity. This PEPCK2 Antibody, also described as a PEPCK-M Antibody, supports studies of mitochondrial metabolism and nutrient adaptation in breast cancer.



PEPCK2 Antibody Human Rectal Cancer IHC. PEPCK2 was detected in a formalin-fixed, paraffin-embedded section of human rectal cancer tissue. Heat-induced epitope retrieval was performed by boiling the section in EDTA buffer, pH 8.0, for 20 minutes followed by cooling before staining with PEPCK2 antibody clone 3F7. Weak, variable brown chromogenic signal is visible in the cytoplasm of malignant glandular epithelial cells, while nuclei are counterstained blue. This PEPCK2 Antibody, also described as a PEPCK-M Antibody, supports studies of mitochondrial enzyme expression and metabolic adaptation in colorectal cancer.



PEPCK2 Antibody Human, Monkey, Rat and Mouse WB. Western blot analysis was performed using lysates from human HepG2 cells in lane 1, human HeLa cells in lane 2, human HEK293 cells in lane 3, human A431 cells in lane 4, monkey COS-7 cells in lane 5, rat kidney in lane 6, mouse kidney in lane 7 and mouse Neuro-2a cells in lane 8. PEPCK2 antibody clone 3F7 detected a band near the predicted molecular weight of 71 kDa across the tested samples, with an additional lower band in mouse kidney. This PEPCK2 Antibody, also described as a PEPCK-M Antibody, supports multi-species analysis of mitochondrial PEPCK expression.



PEPCK2 Antibody MCF7 Breast Cancer Cell FACS. Flow cytometry analysis was performed using human MCF7 breast cancer cells blocked with goat serum and stained with PEPCK2 antibody clone 3F7 at 1 ug per million cells. The red trace represents cells alone, the green trace represents the isotype control and the blue trace represents PEPCK2 antibody staining. The blue population shows a modest rightward shift relative to the isotype control, demonstrating detectable PEPCK2 expression in MCF7 cells. This PEPCK2 Antibody, also described as a PEPCK-M Antibody, supports metabolic protein analysis by flow cytometry.

Description

PEPCK2 Antibody clone 3F7 is a mouse monoclonal antibody that recognizes mitochondrial phosphoenolpyruvate carboxykinase, also known as PEPCK-M and PCK2. This enzyme catalyzes the guanosine triphosphate-dependent conversion of oxaloacetate to phosphoenolpyruvate within the mitochondrial matrix. The reaction connects tricarboxylic acid cycle activity with gluconeogenesis and other metabolic pathways that require phosphoenolpyruvate or oxaloacetate-derived carbon. PEPCK2 is produced with an amino-terminal mitochondrial targeting sequence that directs the newly synthesized protein into mitochondria.

PEPCK-M is distinct from PEPCK-C, the cytosolic phosphoenolpyruvate carboxykinase encoded by the PCK1 gene. Although both enzymes catalyze similar reactions, their different subcellular locations allow them to participate in separate aspects of carbon transport and metabolic regulation. PEPCK2 can support mitochondrial cataplerosis by directing tricarboxylic acid cycle intermediates toward the formation of phosphoenolpyruvate. This product may subsequently contribute to glucose production, glyceroneogenesis, amino acid metabolism and the synthesis of other cellular components. A PEPCK2 Antibody can help researchers distinguish the mitochondrial enzyme from the cytosolic PCK1 isoform when examining these pathways.

Regulation of PEPCK2 is influenced by tissue type, nutrient availability and cellular stress. Under glucose-limited or nutrient-restricted conditions, mitochondrial PEPCK activity can help cells redirect available carbon toward pathways required for survival and biosynthesis. Altered PCK2 expression has been studied in cancer cells adapting to metabolic stress, as well as in research involving glucose homeostasis, lipid synthesis, insulin secretion and mitochondrial energy metabolism. These functions have made the enzyme an important target for investigating how cells balance energy production with the generation of biosynthetic precursors.

PEPCK2 Antibody clone 3F7 provides a monoclonal reagent for examining the expression of the mitochondrial PEPCK isoform in appropriate antibody-based applications. Its recognition of PEPCK-M makes it useful for studies comparing mitochondrial and cytosolic phosphoenolpyruvate carboxykinase pathways, evaluating tissue-specific protein expression or monitoring changes associated with nutrient stress and metabolic reprogramming. NSJ Bioreagents offers this PEPCK2 Antibody for research into gluconeogenesis, cataplerosis, mitochondrial carbon metabolism and the metabolic adaptations associated with cancer and other biological systems.

For additional reagents targeting mitochondrial phosphoenolpyruvate carboxykinase, visit our [PCK2 Antibody](#) page featuring products for gluconeogenesis and metabolic adaptation research.

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Application Notes

Optimal dilution of the PEPCK2 Antibody / PEPCK-M Antibody should be determined by the researcher.

Immunogen

A human recombinant partial protein (amino acids M1-M640) was used as the immunogen for the PEPCK2 antibody.

Storage

After reconstitution, the PEPCK2 antibody can be stored for up to one month at 4°C. For long-term, aliquot and store at -20°C. Avoid repeated freezing and thawing.

Alternate Names

PEPCK-M Antibody, Mitochondrial PEPCK Antibody, PCK2 Antibody, mtPCK2 Antibody, Mitochondrial Phosphoenolpyruvate Carboxykinase Antibody, Phosphoenolpyruvate Carboxykinase 2 Antibody

