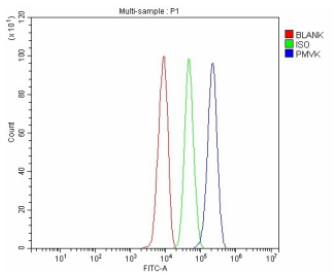
PMVK Antibody / Phosphomevalonate kinase (FY12789)

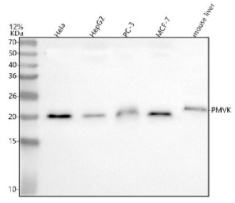
Catalog No.	Formulation	Size
FY12789	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	Human, Mouse
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	Q15126
Applications	Western Blot: 0.25-0.5ug/ml ELISA: 0.1-0.5ug/ml
Limitations	This PMVK antibody is available for research use only.



Flow Cytometry analysis of HepG2 cells using anti-PMVK antibody. Overlay histogram showing HepG2 cells stained with (Blue line). To facilitate intracellular staining, cells were fixed with 4% paraformaldehyde and permeabilized with permeabilization buffer. The cells were blocked with 10% normal goat serum. And then incubated with rabbit anti-PMVK antibody (1 ug/million cells) for 30 min at 20oC. DyLight 488 conjugated goat anti-rabbit IgG (5-10 ug/million cells) was used as secondary antibody for 30 minutes at 20oC. Isotype control antibody (Green line) was rabbit IgG (1 ug/million cells) used under the same conditions. Unlabelled sample without incubation with primary antibody and secondary antibody (Red line) was used as a blank control.



Western blot analysis of PMVK using anti-PMVK antibody. Lane 1: human Hela whole cell lysates, Lane 2: human HepG2 whole cell lysates, Lane 3: human PC-3 whole cell lysates, Lane 4: human MCF-7 whole cell lysates, Lane 5: mouse liver tissue lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-PMVK antibody at 0.5 ug/ml overnight at 4oC, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal was developed using enhanced chemiluminescent. The expected molecular weight of PMVK is ~22 kDa.

Description

PMVK antibody detects Phosphomevalonate kinase, a key enzyme in the mevalonate pathway responsible for cholesterol and isoprenoid biosynthesis. Encoded by the PMVK gene on chromosome 1q21.3, this cytosolic enzyme catalyzes the ATP-dependent phosphorylation of mevalonate 5-phosphate to mevalonate 5-diphosphate, an essential step linking early mevalonate metabolism to downstream sterol and non-sterol isoprenoid synthesis. The mevalonate pathway provides precursors for cholesterol, dolichols, ubiquinone, and prenylated proteins that regulate membrane integrity and signal transduction.

PMVK operates downstream of HMG-CoA reductase, the rate-limiting enzyme in cholesterol biosynthesis. Its activity is tightly controlled by cellular sterol levels and feedback mechanisms that balance lipid production with energy demands. Beyond lipid metabolism, PMVK influences cell proliferation, differentiation, and apoptosis by modulating isoprenoid-dependent signaling pathways. It localizes to both the cytosol and peroxisomes, reflecting its versatile role in cellular metabolism.

The PMVK antibody is widely used in metabolism, lipid biology, and pharmacology research to study cholesterol regulation and mevalonate pathway dynamics. Western blot analysis detects a 21 kilodalton band corresponding to PMVK, while immunofluorescence shows cytoplasmic and peroxisomal staining. This antibody enables quantification of PMVK expression in response to statin treatment or metabolic stress, supporting studies of lipid homeostasis and biosynthetic control.

Altered PMVK expression has been linked to hypercholesterolemia, metabolic disorders, and cancer cell survival, where mevalonate flux influences oncogenic signaling and membrane biosynthesis. The PMVK antibody is a valuable reagent for characterizing cholesterol metabolism, isoprenoid synthesis, and metabolic adaptation. NSJ Bioreagents provides this antibody validated for its applications, ensuring reproducible performance in metabolic research.

Application Notes

Optimal dilution of the PMVK antibody should be determined by the researcher.

Immunogen

E.coli-derived human PMVK recombinant protein (Position: K22-L192) was used as the immunogen for the PMVK antibody.

Storage

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

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