

CMPK2 Antibody (Center)
Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP5206c

Specification

CMPK2 Antibody (Center) - Product Information

Application	WB, IHC-P, FC,E
Primary Accession	Q5EBM0
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	49448
Antigen Region	142-170

CMPK2 Antibody (Center) - Additional Information

Gene ID 129607

Other Names

UMP-CMP kinase 2, mitochondrial, Nucleoside-diphosphate kinase, CMPK2

Target/Specificity

This CMPK2 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 142-170 amino acids from the Central region of human CMPK2.

Dilution

WB~~1:1000
IHC-P~~1:50~100
FC~~1:10~50

Format

Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.

Storage

Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions

CMPK2 Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

CMPK2 Antibody (Center) - Protein Information

Name CMPK2

Function Mitochondrial nucleotide monophosphate kinase needed for salvage dNTP synthesis that

mediates immunomodulatory and antiviral activities through IFN-dependent and IFN-independent pathways (PubMed:[17999954](#), PubMed:[30083606](#), PubMed:[36930652](#), PubMed:[37075076](#)). Restricts the replication of multiple viruses including flaviviruses or coronaviruses (PubMed:[30083606](#), PubMed:[36930652](#), PubMed:[37075076](#)). Together with viperin/RSAD2 and ddhCTP, suppresses the replication of several coronaviruses through inhibition of the viral RNA-dependent RNA polymerase activities (PubMed:[36930652](#)). Concerning flaviviruses, restricts RNA translation when localized to the mitochondria independently of its kinase activity (PubMed:[37075076](#)). Is able to phosphorylate dUMP, dCMP, CMP, UMP and monophosphates of the pyrimidine nucleoside analogs ddC, dFdC, araC, BVDU and FdUrd with ATP as phosphate donor. Efficacy is highest for dUMP followed by dCMP while CMP and UMP are poor substrates. Controls therefore mitochondrial DNA synthesis by supplying required deoxyribonucleotides (By similarity). CMPK2-dependent mitochondrial DNA synthesis is necessary for the production of oxidized mitochondrial DNA fragments after exposure to NLRP3 activators (By similarity). In turn, cytosolic oxidized mtDNA associates with the NLRP3 inflammasome complex and is required for its activation (By similarity).

Cellular Location

Mitochondrion Note=Mitochondrial localization is required for its antiviral function

Tissue Location

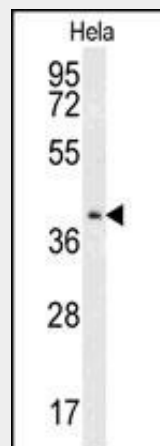
High levels are observed in myeloid, lymphoid and mesenchymal tissues.

CMPK2 Antibody (Center) - Protocols

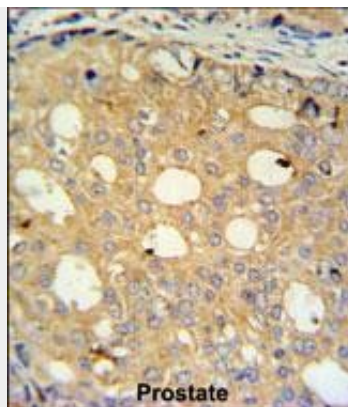
Provided below are standard protocols that you may find useful for product applications.

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

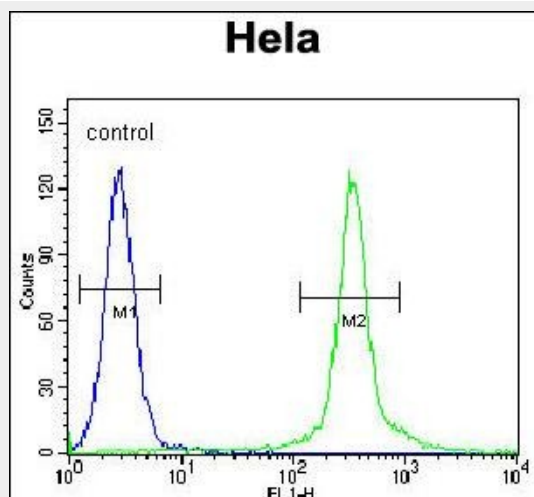
CMPK2 Antibody (Center) - Images



Western blot analysis of CMPK2 Antibody (Center) (Cat. #AP5206c) in HeLa cell line lysates (35ug/lane).CMPK2 (arrow) was detected using the purified Pab.



CMPK2 Antibody (Center) (Cat. #AP5206c) IHC analysis in formalin fixed and paraffin embedded human prostate carcinoma followed by peroxidase conjugation of the secondary antibody and DAB staining. This data demonstrates the use of the CMPK2 Antibody (Center) for immunohistochemistry. Clinical relevance has not been evaluated.



CMPK2 Antibody (Center) (Cat. #AP5206c) flow cytometric analysis of HeLa cells (right histogram) compared to a negative control cell (left histogram). FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.

CMPK2 Antibody (Center) - Background

Mitochondrial UMP-CMP kinase (EC 2.7.2.14) is a component of the salvage pathway for nucleotide synthesis. Other enzymes of the salvage pathway include thymidine kinase-2 (TK2; MIM 188250), deoxynucleotidase-2 (NT5M; MIM 605292), deoxyguanosine kinase (DGUOK; MIM 601465), adenylate kinase-2 (AK2; MIM 103020), adenylate kinase-3 (AK3; MIM 609290), adenylate kinase-3-like-1 (AK3L1; MIM 103030), and nucleoside diphosphate kinase.

CMPK2 Antibody (Center) - References

Xu, Y., et al. J. Biol. Chem. 283(3):1563-1571(2008)