

Active Recombinant Human CMPK1 protein

Cat. No. CMPK1-46H Lot. No. (See product label)

SPECIFICATION

Product Overview	Recombinant Human CMPK1 was expressed in E. coli.
Species	Human
Source	E.coli
ProteinLength	228aa
Description	UMP-CMP kinase plays a critical role in supplying cells with nucleotides by catalysing the phosphorylation of CMP, UMP and dCMP to their respective diphosphates. CMK plays also an important role in the activation of cytidine analogues, aracytidine and gemcitabine, a mainstay of leukaemia and lymphoma therapy. CMK has a remarkable ability of to phosphorylate L-nucleotides from their monophosphate to diphosphate forms as shown for β -L-2'3'-dideoxy-3'thiacytidine (L-SSdC, 3-TC or lamivudine), an anti-HIV and anti-hepatitis B drug.
Form	150mM KCl, 50mM Tris-HCl, pH7.5, 2mM β -mercaptoethanol, 50% glycerol.
Bio-activity	≥ 1 unit/mg protein.
Molecular Mass	27kDa
Unit Definition	One unit of UMP-CMP kinase converts 1.0 mole of UMP and ATP to UDP and ADP per minute at pH 7.6 at 25 centigrade, using a coupled enzyme system with PK/LDH.

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Applications

CMK enzyme is a highly pure and active cloned human UMP-CMP Kinase which can be used:

- to characterize a monophosphorylated nucleotide analogue as a potential substrate of CMK
- to quantify UMP, CMP, dUMP or dCMP in a sample
- to synthesize enzymatically the di-phosphate form of nucleotide analogue from its monophosphate form (e.g. dFdC-DP)

Storage Store at -20 centigrade

GENE INFORMATION

Gene Name [CMPK1 cytidine monophosphate \(UMP-CMP\) kinase 1, cytosolic \[Homo sapiens \]](#)

Official Symbol [CMPK1](#)

Synonyms CMPK1; cytidine monophosphate (UMP-CMP) kinase 1, cytosolic; CMPK, cytidylate kinase; UMP-CMP kinase; Cytidine monophosphate kinase; UMP CMP kinase; UMP CMPK; UMP/CMP kinase; cytidylate kinase; deoxycytidylate kinase; uridine monophosphate kinase; uridine monophosphate/cytidine monophosphate kinase; CMK; UMK; CMPK; UMPK; UMP-CMPK; RP11-511I2.1;

Gene ID [51727](#)

mRNA Refseq [NM_001136140](#)

Protein Refseq [NP_001129612](#)

MIM [191710](#)

UniProt ID [P30085](#)

Chromosome 1p34.1-p33

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Location	
Pathway	Metabolic pathways, organism-specific biosystem; Metabolism, organism-specific biosystem; Metabolism of nucleotides, organism-specific biosystem; Pyrimidine metabolism, organism-specific biosystem; Pyrimidine metabolism, conserved biosystem; Pyrimidine ribonucleotide biosynthesis, UMP => UDP/UTP, CDP/CTP, organism-specific biosystem;
Function	ATP binding; cytidylate kinase activity; nucleotide binding; phosphotransferase activity, phosphate group as acceptor; transferase activity; uridine kinase activity;

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