

# Human CMPK1 Protein (His Tag)

Catalog Number: 14258-H07B



Sino Biological  
Biological Solution Specialist

## General Information

### Gene Name Synonym:

CK; CMK; CMPK; UMK; UMP-CMPK; UMPK

### Protein Construction:

A DNA sequence encoding the human CMPK1 (P30085) (Met1-Gly196) was fused with a polyhistidine tag at the N-terminus.

**Source:** Human

**Expression Host:** Baculovirus-Insect Cells

## QC Testing

**Purity:** > 95 % as determined by SDS-PAGE

### Bio Activity:

**Kinase activity untested**

### Endotoxin:

< 1.0 EU per µg of the protein as determined by the LAL method

### Stability:

Samples are stable for up to twelve months from date of receipt at -70 °C

**Predicted N terminal:** His

### Molecular Mass:

The recombinant human CMPK1 consists of 214 amino acids and has a calculated molecular mass of 24.5 kDa. The recombinant protein migrates as an approximately 27 kDa band in SDS-PAGE under reducing conditions.

### Formulation:

Supplied as sterile 20mM Tris, 500mM NaCl, pH 7.4, 10% glycerol

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

## Usage Guide

### Storage:

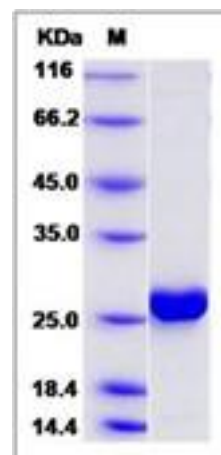
Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

**Avoid repeated freeze-thaw cycles.**

### Reconstitution:

Detailed reconstitution instructions are sent along with the products.

## SDS-PAGE:



## Protein Description

CMPK1 plays a key role in the maintenance of pyrimidine nucleotide pool profile and for the metabolism of pyrimidine analogs in cells. It catalyzes the phosphoryl transfer from ATP to UMP, CMP, and deoxy-CMP (dCMP), resulting in the formation of ADP and the corresponding nucleoside diphosphate. CMPK1 also has a significant role in the activation of pyrimidine analogs, which are clinically useful anti-cancer and anti-viral drugs. In the meanwhile, CMPK1 functions in cellular nucleic acid biosynthesis.

## References

- 1.Liou J, *et al.* (2004) Phosphorylation of Cytidine, Deoxycytidine, and Their Analog Monophosphates by Human UMP/CMP Kinase is Differentially Regulated by ATP and Magnesium. *Molecular Pharmacology*. 67(3):806-14.
- 2.Gerhard DS, *et al.* (2004) The Status, Quality, and Expansion of the NIH Full-Length cDNA Project: The Mammalian Gene Collection (MGC). *Genome Research*. 14(10B):2121-7.
- 3.Segura-Pena D, *et al.* (2004) Substrate-induced Conformational Changes in Human UMP/CMP Kinase. *Journal of Biological Chemistry*. 279(32):33882-9.

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