

## CDK2 Protein, Human (N-His)

Cat. No.:	HY-P70014A
Synonyms:	rHuCyclin-dependent kinase 2/CDK2, His; Cyclin-Dependent Kinase 2; Cell Division Protein Kinase 2; p33 Protein Kinase; CDK2; CDKN2
Species:	Human
Source:	E. coli
Accession:	P24941 (E2-L298)
Gene ID:	1017
Molecular Weight:	approximately 32.65 kDa

### PROPERTIES

AA Sequence	<p> ENFQKVEKIG  EGVPSTAIRE  FLHQDLKKFM  RVLHRDLKPQ  EVVTLWYRAP  LFPGDSEIDQ  KWARQDFSQV  AHPFFQDVTK </p> <p> EGTYGVVYKA  ISLLKELNHP  DASALTGIPL  NLLINTEGAI  EILLGCKYYS  LFRIFRTLGT  VPPLDEDGRS  PVPHLRL </p> <p> RNKLTGEVVA  NIVKLLDVIH  PLIKSYLFQL  KLADFGGLARA  TAVDIWSLGC  PDEVVWPGVT  LLSQMLHYDP </p> <p> LKKIRLDTET  TENKLYLVFE  LQGLAFCHSH  FGVPVRTYTH  IFAEMVTRRA  SMPDYKPSFP  NKRISAKAAL </p>
Biological Activity	The enzyme activity of this recombinant protein is testing in progress, we cannot offer a guarantee yet.
Appearance	Solution.
Formulation	Supplied as a 0.2 µm filtered solution of 200 mM Tris, 200 mM NaCl, 1 mM DTT, 40% Glycerol, pH 8.0.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	N/A.
Storage & Stability	Stored at -80°C for 1 year. It is stable at -20°C for 3 months after opening. It is recommended to freeze aliquots at -80°C for extended storage. Avoid repeated freeze-thaw cycles.
Shipping	Shipping with dry ice.

### DESCRIPTION

Background	CDK2, a serine/threonine-protein kinase, intricately regulates the cell cycle, playing an indispensable role in meiosis while being dispensable for mitosis. Operating at the nexus of cellular processes, CDK2 phosphorylates a diverse array of substrates, including CTNNB1, USP37, p53/TP53, NPM1, CDK7, RB1, BRCA2, MYC, NPAT, and EZH2. It orchestrates critical
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events such as centrosome duplication and DNA synthesis initiation at the G1-S transition, modulating G2 progression and finely tuning the balance between cellular proliferation, death, and DNA repair in human embryonic stem cells. Activated sequentially by cyclin E and cyclin A2, CDK2 regulates the transition from S phase to mitosis. Notably, its phosphorylation of EZH2 is implicated in maintaining H3K27me3 and epigenetic gene silencing. CDK2's involvement extends to DNA damage responses, where it regulates the G1-S phase checkpoint, phosphorylates BRCA2, and modulates homologous recombination-dependent repair. Furthermore, CDK2 participates in diverse signaling pathways, including vitamin D-mediated growth inhibition, NO-mediated signaling, and the phosphorylation of substrates such as FOXP3 and ERCC6, highlighting its multifaceted role in cellular physiology.

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**Caution: Product has not been fully validated for medical applications. For research use only.**

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