

CDK2 Protein, Human (His)

Cat. No.:	HY-P70014
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:	32-35 kDa

PROPERTIES

AA Sequence	<pre> E N F Q K V E K I G E G T Y G V V Y K A R N K L T G E V V A L K K I R L D T E T E G V P S T A I R E I S L L K E L N H P N I V K L L D V I H T E N K L Y L V F E F L H Q D L K K F M D A S A L T G I P L P L I K S Y L F Q L L Q G L A F C H S H R V L H R D L K P Q N L L I N T E G A I K L A D F G L A R A F G V P V R T Y T H E V V T L W Y R A P E I L L G C K Y Y S T A V D I W S L G C I F A E M V T R R A L F P G D S E I D Q L F R I F R T L G T P D E V V W P G V T S M P D Y K P S F P K W A R Q D F S K V V P P L D E D G R S L L S Q M L H Y D P N K R I S A K A A L A H P F F Q D V T K P V P H L R L </pre>
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 20 mM Tris-HCl/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 CTNBN1, 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.

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

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