CDK1 Protein, Mouse (sf9, His-GST)

Cat. No.:	HY-P75669
Synonyms:	Cyclin-dependent kinase 1; CDK1; p34 protein kinase; CDC2; CDC28A; CDKN1; P34CDC2
Species:	Mouse
Source:	Sf9 insect cells
Accession:	P11440 (M1-M297)
Gene ID:	12534
Molecular Weight:	Approximately 57 kDa

PROPERTIES

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, 500 mM Nacl, 10% glycerol, pH 8.0.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconsititution	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	CDK1 Protein plays a central role in controlling the eukaryotic cell cycle by modulating both the centrosome cycle and mitotic onset. It facilitates the G2-M transition by associating with multiple interphase cyclins and phosphorylates an extensive array of substrates involved in diverse cellular processes, including cell cycle regulation, DNA repair, and apoptosis. During G2 and early mitosis, CDC25A/B/C-mediated dephosphorylation activates CDK1/cyclin complexes, triggering centrosome separation, Golgi dynamics, nuclear envelope breakdown, and chromosome condensation. Upon successful alignment of chromosomes at the metaphase plate, CDK1 activity is turned off by WEE1- and PKMYT1-mediated phosphorylation, allowing sister chromatid separation, chromosome decondensation, nuclear envelope reformation, and cytokinesis. CDK1 also plays a role in cellular responses to DNA damage, as it is inactivated by PKR/EIF2AK2- and WEE1-mediated phosphorylation, contributing to the G2 checkpoint. Reactivation after DNA repair occurs through WIP1-dependent signaling, leading to CDC25A/B/C-mediated dephosphorylation and the resumption of cell cycle progression. Additionally, CDK1 phosphorylates various substrates involved in microtubule dynamics, spindle formation, and cell survival, highlighting its multifaceted regulatory role in orchestrating essential cellular events.

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

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