CDK4 Protein, Human (Baculovirus, His)

Cat. No.:	HY-P700569
Synonyms:	CDK4; Cell division protein kinase 4; CMM3; PSK-J3
Species:	Human
Source:	Sf9 insect cells
Accession:	P11802-1 (A2-E303)
Gene ID:	1019
Molecular Weight:	35.6 kDa

PROPERTIES

AA Sequence	ATSRYEPVAE IGVGAYGTVY KARDPHSGHF VALKSVRVPN GGGGGGGLPI STVREVALLR RLEAFEHPNV VRLMDVCATS RTDREIKVTL VFEHVDQDLR TYLDKAPPPG LPAETIKDLM RQFLRGLDFL HANCIVHRDL KPENILVTSG GTVKLADFGL ARIYSYQMAL TPVVVTLWYR APEVLLQSTY ATPVDMWSVG CIFAEMFRRK PLFCGNSEAD QLGKIFDLIG LPPEDDWPRD VSLPRGAFPP RGPRPVQSVV PEMEESGAQL LLEMLTFNPH KRISAFRALQ HSYLHKDEGN PE
Biological Activity	The enzyme activity of this recombinant protein is testing in progress, we cannot offer a guarantee yet.
Appearance	Lyophilized powder
Formulation	Lyophilized from a 0.2 μm filtered solution of 10 mM Tris-HCl, 1 mM EDTA, 6% Trehalose, pH 8.0.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O.
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	CDK4 protein serves as the Ser/Thr-kinase component within cyclin D-CDK4 (DC) complexes, orchestrating the phosphorylation and inhibition of members belonging to the retinoblastoma (RB) protein family, including RB1. This regulatory activity is pivotal in controlling the cell cycle during the G(1)/S transition. The phosphorylation of RB1 instigates

the dissociation of the transcription factor E2F from the RB/E2F complexes, facilitating the subsequent transcription of E2F target genes that drive progression through the G(1) phase. Particularly notable is the hypophosphorylation of RB1 occurring in early G(1) phase. As essential integrators of diverse mitogenic and antimitogenic signals, cyclin D-CDK4 complexes play a central role in cell cycle regulation. Additionally, CDK4 protein exhibits the capability to phosphorylate SMAD3 in a cell-cycle-dependent manner, thereby repressing its transcriptional activity. CDK4 is a crucial component of the ternary complex, cyclin D/CDK4/CDKN1B, which is indispensable for the nuclear translocation and activity of the cyclin D-CDK4 complex.

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