PLK1 Protein, Human (sf9, His)

Cat. No.:	HY-P76550
Synonyms:	Serine/threonine-protein kinase PLK1; PLK-1; STPK13
Species:	Human
Source:	Sf9 insect cells
Accession:	P53350 (M1-S603)
Gene ID:	5347
Molecular Weight:	Approximately 66 kDa

PROPERTIES

Biological Activity	The specific activity was determined to be > 3 nmol/min/mg using casein as substrate.
Appearance	Solution.
Formulation	Supplied as a 0.2 μm filtered solution of 50 mM Tris, 100 mM NaCl, pH 7.4, 0.5 mM EDTA, 0.5 mM EGTA, 0.5 mM PMSF, 25% glycerol.
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	PLK1, a serine/threonine-protein kinase, plays a pivotal role in orchestrating various essential functions throughout the M phase of the cell cycle. It regulates centrosome maturation and spindle assembly, facilitates the removal of cohesins from chromosome arms, inactivates anaphase-promoting complex/cyclosome (APC/C) inhibitors, and governs mitotic exit and cytokinesis. Operating by binding and phosphorylating proteins that are already phosphorylated on specific motifs recognized by the POLO box domains, PLK1 phosphorylates an extensive array of substrates, including BORA, BUB1B/BUBR1, CCNB1, CDC25C, CEP55, ECT2, ERCC6L, FBXO5/EMI1, FOXM1, KIF20A/MKLP2, CENPU, NEDD1, NINL, NPM1, NUDC, PKMYT1/MYT1, PRC1, RACGAP1/CYK4, SGO1, STAG2/SA2, TEX14, TOPORS, p73/TP73, TPT1, WEE1, HNRNPU, and others. PLK1's crucial roles include promoting centrosome functions and bipolar spindle assembly through the phosphorylation of KIZ, NEDD1, and NINL. Additionally, it governs mitotic exit and cytokinesis by phosphorylating CEP55, ECT2, KIF20A/MKLP2, CENPU, PRC1, and RACGAP1. PLK1's involvement extends to kinetochore functions, sister chromatid cohesion, and the regulation of various checkpoint proteins, positioning it as a key player in the intricate network governing cell cycle progression.

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

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