PIM1 Protein, Human

Cat. No.:	HY-P701745
Synonyms:	PIM1; Serine/threonine-protein kinase pim-1
Species:	Human
Source:	E. coli
Accession:	P11309 (A14-K313)
Gene ID:	5292
Molecular Weight:	

PROPERTIES

Appearance	Solution.
Formulation	Supplied as a 0.22 μm filtered solution of 50 mM Tris-HCl, pH7.5, 200 mM NaCl, 20% glycerol.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	Please use rapid thawing with running water to thaw the protein.
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	The PIM1 protein, a proto-oncogene with serine/threonine kinase activity, plays a pivotal role in cell survival and proliferation, conferring a selective advantage in tumorigenesis. Its oncogenic activity involves the regulation of MYC transcriptional activity, cell cycle progression, and phosphorylation-mediated inhibition of proapoptotic proteins, including BAD, MAP3K5, and FOXO3. PIM1 phosphorylates MYC, enhancing its stability and transcriptional activity, potentially explaining the synergism between PIM1 and MYC in tumorigenesis. By phosphorylating BAD, PIM1 induces the release of the anti-apoptotic protein Bcl-X(L)/BCL2L1, promoting survival signaling. Additionally, PIM1 phosphorylates MAP3K5, inhibiting its kinase activity and suppressing MAP3K5-mediated apoptotic signaling. PIM1 stimulates cell cycle progression at G1-S and G2-M transitions by phosphorylating CDC25A and CDC25C, and it down-regulates the cell cycle regulator CDKN1B at both transcriptional and post-translational levels. PIM1 also impacts chromatin structure by phosphorylating HP1 gamma/CBX3 and acts as a regulator of homing and migration of bone marrow cells. Furthermore, PIM1 positively regulates mTORC1 signaling, inhibits drug sensitivity through ABCG2 phosphorylation and activation, and promotes brown adipocyte differentiation.

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

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