PDPK1 Protein, Human (Sf9)

Cat. No.:	HY-P701738
Synonyms:	PDPK1; 3-phosphoinositide-dependent protein kinase 1; hPDK1
Species:	Human
Source:	Sf9 insect cells
Accession:	O15530 (M51-A360)
Gene ID:	5170
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	PDPK1, a serine/threonine kinase, assumes a central role as a master kinase within the AGC family, orchestrating the phosphorylation and activation of various downstream protein kinases. Its diverse targets include protein kinase B (PKB/AKT1, PKB/AKT2, PKB/AKT3), p70 ribosomal protein S6 kinase (RPS6KB1), p90 ribosomal protein S6 kinase (RPS6KA1, RPS6KA2, and RPS6KA3), cyclic AMP-dependent protein kinase (PRKACA), protein kinase C (PRKCD and PRKCZ), serum and glucocorticoid-inducible kinase (SGK1, SGK2, and SGK3), p21-activated kinase-1 (PAK1), and protein kinase PKN (PKN1 and PKN2). PDPK1 plays a pivotal role in transducing insulin signals by activating PKB/AKT1, thereby regulating downstream targets involved in cell proliferation, survival, glucose and amino acid uptake, and storage. Additionally, it exerts regulatory functions, negatively modulating TGF-beta-induced signaling and activating PPARG transcriptional activity to promote adipocyte differentiation. PDPK1 further participates in diverse cellular processes, including the activation of the NF-kappa-B pathway via IKKB phosphorylation, regulation of focal adhesions by angiotensin II, control of pancreatic cell proliferation, and modulation of Ca(2+) entry and Ca(2+)-activated K(+) channels in mast cells. It also plays critical roles in endothelial cell motility, cardiac homeostasis, thymocyte development, and provides negative feedback inhibition in toll-like receptor-mediated NF-kappa-B activation in macrophages, with isoform 3 being catalytically inactive.

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

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