

DAPK3/ZIPK Protein, Human (sf9, GST)

Cat. No.:	HY-P77286
Synonyms:	Death-associated protein kinase 3; DAP kinase 3; Dlk; MYPT1 kinase; ZIPK
Species:	Human
Source:	Sf9 insect cells
Accession:	O43293-1 (M1-R454)
Gene ID:	1613
Molecular Weight:	Approximately 70 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 mM GSH, pH 7.4
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	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

DAPK3/ZIPK, a serine/threonine kinase, intricately regulates diverse cellular processes such as apoptosis, autophagy, transcription, translation, and actin cytoskeleton reorganization. It plays a crucial role in orchestrating both type I apoptotic and type II autophagic cell death signals, depending on the cellular context. DAPK3/ZIPK also governs smooth muscle contraction and is implicated in the regulation of starvation-induced autophagy. Its influence on myosin phosphorylation extends to both smooth muscle and non-muscle cells, where it directly phosphorylates MYL12B and MYL9 or inhibits smooth muscle myosin phosphatase (SMPP1M) via PPP1R12A phosphorylation. In non-muscle cells, it phosphorylates MYL12B, leading to actin cytoskeleton reorganization. Isoform 2, an alternative form of DAPK3/ZIPK, contributes to myosin, PPP1R12A, and MYL12B phosphorylation, inducing the condensation of actin stress fibers into thick bundles. Additionally, DAPK3/ZIPK plays a role in actin filament focal adhesion dynamics, and its function is modulated by RhoD. Moreover, it positively regulates canonical Wnt/beta-catenin signaling, interacts with NLK and TCF7L2, phosphorylates RPL13A upon interferon-gamma activation, enhancing its involvement in transcript-selective translation inhibition. DAPK3/ZIPK's diverse functions also extend to the regulation of cell cycle progression and cell proliferation, potentially acting as a tumor suppressor.

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

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