PIP4K2A Protein, Human (HEK293, His)

Cat. No.:	HY-P71206
Synonyms:	1-phosphatidylinositol 5-phosphate 4-kinase 2-alpha; Diphosphoinositide kinase 2-alpha; PIP5KIII; Phosphatidylinositol 5-phosphate 4-kinase type II alpha; PtdIns(4)P-5-kinase B isoform; PtdIns(4)P-5-kinase C isoform; PtdIns(5)P-4-kinase isoform 2-alpha
Species:	Human
Source:	HEK293
Accession:	P48426 (M1-T406)
Gene ID:	5305
Molecular Weight:	52-58 kDa

PROPERTIES

AA Sequence	M A T P G N L G S S V L A S K T K T K K K H F V A Q K V K L F R A S D P L L S V L M W G V N H S I N E L S H V Q I P V M L M P D D F K A Y S K I K V D N H L F N K E N M P S H F K F K E Y C P M V F R N L R E R F G I D D Q D F Q N S L T R S A P L P N D S Q A R S G A R F H T S Y D K R Y I I K T I T S E D V A E M H N I L K K Y H Q Y I V E C H G I T L L P Q F L G M Y R L N V D G V E I Y V I V T R N V F S H R L S V Y R K Y D L K G S T V A R E A S D K E K A K E L P T L K D N D F I N E G Q K I Y I D D N N K K V F L E K L K K D V E F L A Q L K L M D Y S L L V G I H D V E R A E Q E E V E C E E N D G E E E G E S D G T H P V G T P P D S P G N T L N S S P P L A P G E F D P N I D V Y G I K C H E N S P R K E V Y F M A I I D I L T H Y D A K K K A A H A A K T V K H G A G A E I S T V N P E Q Y S K R F L D F I G H I L T
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 20 mM PB, 150 mM NaCl, pH 7.4.
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. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
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	The PIP4K2A protein plays a multifaceted role in cellular regulation, catalyzing the phosphorylation of phosphatidylinositol 5-phosphate (PtdIns5P) at the fourth hydroxyl of the myo-inositol ring to generate phosphatidylinositol 4,5-bisphosphate (PtdIns(4,5)P2). This protein exhibits both ATP- and GTP-dependent kinase activities, contributing to its versatile enzymatic repertoire, and may modulate cytosolic PtdIns5P levels in response to tyrosine phosphorylation activation. Additionally, PIP4K2A is essential for lysosome-peroxisome membrane contacts, influencing intracellular cholesterol transport by regulating peroxisomal PtdIns(4,5)P2 levels. In collaboration with PIP4K2B, it plays a role in mediating autophagy during nutrient stress, impacting autophagosome-lysosome fusion and cellular lipid metabolism. PIP4K2A's involvement in thrombopoiesis and megakaryocyte maturation, coupled with its negative regulation of insulin signaling through a catalytic-independent mechanism, further underscores its diverse functions in cellular processes. Interactions with PIP5Ks highlight its role in suppressing PIP5K-mediated PtdIns(4,5)P2 synthesis and insulin-dependent conversion to PtdIns(3,4,5)P3, revealing its intricate regulatory connections in cellular signaling pathways.

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