PDK2 Antibody – Rabbit Polyclonal

PRODUCT OVERVIEW

Product Name	PDK2, Polyclonal Antibody
Full Product Name	PDK2 Rabbit pAb
Product Gene Name	anti-PDK2 antibody
Product Synonym Names	PDHK2; PDKII
Clonality	Polyclonal
Isotype	Ig
Host	Rabbit
Species Reactivity	Human, Mouse, Rat
Form/Format	PBS with 0.09% (W/V) Sodium Azide, pH 7.3.
Purity/Purification	Affinity Purified
Preparation and Storage	Maintain refrigerated at 2-8 degree C for up to 2 weeks. For long term storage store at -20 degree C in small aliquots to prevent freeze-thaw cycles.
Molecular Weight	46; 39; 46; 46kDa
OMIM	602525
3D Structure	ModBase 3D Structure for Q15119
Immunogen	This PDK2 antibody is generated from rabbits immunized with recombinant protein of human PDK2.
Cellular Localization	Mitochondrion
ISO Certification	Manufactured in an ISO 9001:2015 Certified Laboratory.
Applications Tested/Suitable for anti-PDK2 antibody	Western Blot (WB), Flow Cytometry (FC/FACS), Immunohistochemistry (IHC) Paraffin
Application Notes for anti-PDK2 antibody	WB: 1:1000 FC/FACS: 1:10-50 IHC-P: 1:10-50
Related Product Information for anti-PDK2 antibody	Kinase that plays a key role in the regulation of glucose and fatty acid metabolism and homeostasis via phosphorylation of the pyruvate dehydrogenase subunits PDHA1 and PDHA2. This inhibits pyruvate dehydrogenase activity, and thereby regulates metabolite flux through the tricarboxylic acid cycle, down-regulates aerobic respiration and inhibits the formation of acetyl-coenzyme A from pyruvate. Inhibition of pyruvate dehydrogenase decreases glucose utilization and increases fat metabolism. Mediates cellular responses to insulin. Plays an important role in maintaining normal blood glucose levels and in metabolic adaptation to nutrient availability. Via its regulation of pyruvate dehydrogenase activity, plays an important role in maintaining normal blood pH and in preventing the accumulation of ketone bodies under starvation. Plays a role in the regulation of cell proliferation and in resistance to apoptosis under oxidative stress. Plays a role in p53/TP53-mediated apoptosis.
Other Notes	Small volumes of anti-PDK2 antibody vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.
Searchable Terms for PDK2 purchase	MBS8558979 is an antibody targeting PDK2. Also known as PDK2 Rabbit pAb. Reactive in Human, Mouse, Rat. Host: Rabbit.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for PDK2. It may not necessarily be applicable to this product.

NCBI GI #	315630349
NCBI GeneID	5164
NCBI Accession #	NP_001186827.1
UniProt Primary Accession #	Q15119
UniProt Related Accession #	Q15119
GenBank Nucleotide #	NP_001186827.1
NCBI Official Full Name	pyruvate dehydrogenase kinase, isozyme 2 isoform 2
NCBI Official Synonym Full Names	pyruvate dehydrogenase kinase 2
NCBI Official Symbol	PDK2
NCBI Official Synonym Symbols	PDHK2; PDKII
UniProt Protein Name	[Pyruvate dehydrogenase [lipoamide]] kinase isozyme 2, mitochondrial
UniProt Synonym Protein Names	Pyruvate dehydrogenase kinase isoform 2
UniProt Gene Name	PDK2
UniProt Synonym Gene Names	PDHK2; PDH kinase 2; PDKII
UniProt Entry Name	PDK2_HUMAN
NCBI Protein Information	pyruvate dehydrogenase kinase, isozyme 2
NCBI Summary for PDK2	This gene encodes a member of the pyruvate dehydrogenase kinase family. The encoded protein phosphorylates pyruvate dehydrogenase, down-regulating the activity of the mitochondrial pyruvate dehydrogenase complex. Overexpression of this gene may play a role in both cancer and diabetes. Alternatively spliced transcript variants encoding multiple isoforms have been observed for this gene. [provided by RefSeq, Dec 2010]

UniProt Comments for PDK2	PDHK2: an atypical protein kinase associated with the mitochondrial matrix. The PDHKs play crucial roles in switching metabolic flux from oxidative phosphorylation towards glycolysis. PDHK2 is expressed in all tissues. Contains a HATPase_c catalytic domain, found in several ATP-binding proteins including protein histidine kinases (PHKs), PHDKs, DNA gyrase B, topoisomerases, heat shock proteins, and DNA mismatch repair proteins. PDHK regulates glucose oxidation through inhibitory phosphorylation of the E1 alpha subunit of the mitochondrial pyruvate dehydrogenase complex (PDHC) at any one of 3 inhibitory serine residues. Inhibitory sites 1, 2, and 3 correspond to S293, S300, and S232 in human PDHA1, respectively. Four PDHK isoenzymes have been described, each with different site specificity: all four phosphorylate sites 1 and 2 but at different rates; for site 1 PDHK2 >PDHK4 >PDHK1 >PDHK3; for site 2, PDHK3> PDHK4 > PDHK2 > PDHK1. Only PDHK1 phosphorylates site 3. PDHKs are recruited to the PDHC by binding to a lipoyl group covalently attached to the inner lipoyl domain of the E2 component. PDHA1 deficiency is the most common enzyme defect in patients with primary lactic acidosis. Suppression of PDH by PDHK inhibits the conversion of pyruvate to acetyl-CoA, attenuates mitochondrial respiration, and may contribute to the increased lactate production observed in many tumors. The PDH pathway is repressed in a majority of non-small cell lung carcinomas. Inhibited by AZD7545, dichloroacetate (DCA), and radicicol. Radicicol inhibits kinase activity by binding directly to the ATP-binding pocket of PDHK, similar to HSP90 from the same ATPase/kinase superfamily. Protein type: Mitochondrial; Protein kinase, atypical; EC 2.7.11.2; Kinase, protein; ATYPICAL group; PDHK family; PDHK subfamily Chromosomal Location of Human Ortholog: 17q21.33 Cellular Component: nucleoplasm; mitochondrion; mitochondrial matrix; cytoplasm; mitochondrial pyruvate dehydrogenase complex Molecular Function: protein homodimerization activity; pyruvate dehydrogenase (acetyl-transferring) kinase activity; ATP binding; protein kinase activity Biological Process: cellular metabolic process; insulin receptor signaling pathway; regulation of pH; glucose metabolic process; regulation of acetyl-CoA biosynthetic process from pyruvate; regulation of gluconeogenesis; cellular response to nutrient; glucose homeostasis; pyruvate metabolic process; protein amino acid phosphorylation
Research Articles on PDK2	**1.** PDK2/PARL senses defects in mitochondrial bioenergetics.
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