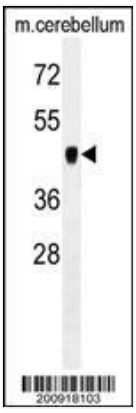
PDK2 Antibody – Mouse Monoclonal

PRODUCT OVERVIEW

Product Name	PDK2, Monoclonal Antibody
Full Product Name	PDK2 (PDK2, PDHK2, [Pyruvate dehydrogenase [lipoamide]] kinase isozyme 2, mitochondrial, Pyruvate dehydrogenase kinase isoform 2) (Biotin)
Product Gene Name	anti-PDK2 antibody
Product Synonym Names	PDK2; PDHK2; [Pyruvate dehydrogenase [lipoamide]] kinase isozyme 2; mitochondrial; Pyruvate dehydrogenase kinase isoform 2
Clonality	Monoclonal
Isotype	IgG1,k
Clone Number	180CT10.2.3
Host	Mouse
Species Reactivity	Mouse
Form/Format	Supplied as a liquid in PBS, pH 7.2. No preservative added. Labeled with Biotin.
Purity/Purification	Purified by Protein G Affinity Chromatography
Preparation and Storage	Store product at 4 degree C if to be used immediately within two weeks. For long-term storage, aliquot to avoid repeated freezing and thawing and store at -20 degree C. Aliquots are stable at -20 degree C for 12 months after receipt. Dilute required amount only prior to immediate use. Further dilutions can be made in assay buffer. For maximum recovery of product, centrifuge the original vial after thawing and prior to removing the cap.
Molecular Weight	38,864 Da
OMIM	602525
3D Structure	ModBase 3D Structure for Q15119
Immunogen	PDK2 Mab is generated from mouse immunized with PDK2 recombinant protein.
Conjugate	Biotin
Product Categories/Family for anti-PDK2 antibody	Antibodies; Enzymes; Dehydrogenase
Applications Tested/Suitable for anti-PDK2 antibody	ELISA (EIA), Western Blot (WB)
Application Notes for anti-PDK2 antibody	ELISA: 1:1000 WB: 1:100-500 Applications are based on unconjugated antibody.
Related Product Information for anti-PDK2 antibody	Inhibits the mitochondrial pyruvate dehydrogenase complex by phosphorylation of the E1 alpha subunit, thus contributing to the regulation of glucose metabolism.
Product References and Citations for anti-PDK2 antibody	Li, J., et al. J. Biol. Chem. 284(49):34458-34467(2009) Fencl, F., et al. Pediatr. Nephrol. 24(5):983-989(2009) Sun, W., et al. Clin. Cancer Res. 15(2):476-484(2009) Hiromasa, Y., et al. Biochemistry 47(8):2312-2324(2008) Hiromasa, Y., et al. Biochemistry 47(8):2298-2311(2008)
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	MBS6121225 is an antibody targeting PDK2. Also known as PDK2 (PDK2, PDHK2, [Pyruvate dehydrogenase [lipoamide]] kinase isozyme 2, mitochondrial, Pyruvate dehydrogenase kinase isoform 2) (Biotin). Reactive in Mouse. Host: Mouse.



Western Blot (WB) of anti-PDK2 antibody
PDK2 Antibody western blot analysis in mouse cerebellum tissue lysates (35ug/lane).This demonstrates the PDK2 antibody detected the PDK2 protein (arrow).

ADDITIONAL DETAILS

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

NCBI GI #	19923736
NCBI GeneID	5164
NCBI Accession #	NP_002602.2
UniProt Primary Accession #	Q15119
UniProt Secondary Accession #	Q6P515; Q9BS05; A8K3A7; B3KNW0
UniProt Related Accession #	Q15119
GenBank Nucleotide #	NM_002611.4
NCBI Official Full Name	pyruvate dehydrogenase kinase, isozyme 2 isoform 1
NCBI Official Synonym Full Names	pyruvate dehydrogenase kinase, isozyme 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; PDH kinase 2; pyruvate dehydrogenase kinase, isoenzyme 2; pyruvate dehydrogenase, lipoamide, kinase isozyme 2, mitochondrial; [Pyruvate dehydrogenase (acetyl-transferring)] kinase isozyme 2, mitochondrial
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.** The final compound of this series, 2-[(2,4-dihydroxyphenyl)sulfonyl]isoindoline-4,6-diol, designated PS10, inhibits all four PDK isoforms with IC50 = 0.8 muM for PDK2.
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