PDK4 Antibody – Rabbit Polyclonal

PRODUCT OVERVIEW

Product Name	PDK4, Polyclonal Antibody
Full Product Name	PDK4 (PDHK4, [Pyruvate Dehydrogenase [Lipoamide]] Kinase Isozyme 4, Mitochondrial, Pyruvate Dehydrogenase Kinase Isoform 4, FLJ40832) (Max
Product Gene Name	anti-PDK4 antibody
Clonality	Polyclonal
Isotype	IgG
Host	Rabbit
Species Reactivity	Human
Form/Format	Supplied as a liquid in PBS, pH 7.2. No preservative added. Labeled with MaxLight550.
Purity/Purification	Purified by Protein A Affinity Chromatography.
Specificity	Recognizes human PDK4.
Preparation and Storage	Store product at 4 degree C in the dark. DO NOT FREEZE! Stable at 4 degree C for 12 months after receipt as an undiluted liquid. Dilute required amo
Molecular Weight	46,469 Da
Chromosome Location	Chromosome: 7; NC_000007.13 (95212809..95225925, complement). Location: 7q21.3
OMIM	602527
3D Structure	ModBase 3D Structure for Q16654
Immunogen	Full length human PDK4, aa1-411 (NP_002603.1).
Immunogen Sequence	MKAARFVLRSAGSLNGAGLVPREVEHFSRYSPSPLSMKQLLDFGSENACERTSFAFLRQELPVRLANILKEIDILPTQLVNTSSVQLVKSWYIQSLMDLVEF
Conjugate	MaxLight550
Note	Preservative Free
Product Categories/Family for anti-PDK4 antibody	Antibodies; Enzymes; Dehydrogenase
Applications Tested/Suitable for anti-PDK4 antibody	Western Blot (WB)
Application Notes for anti-PDK4 antibody	Applications are based on unconjugated antibody.

Related Product Information for anti-PDK4 antibody	This gene is a member of the PDK/BCKDK protein kinase family and encodes a mitochondrial protein with a histidine kinase domain. This protein is loc
Other Notes	Small volumes of anti-PDK4 antibody vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessa
Searchable Terms for PDK4 purchase	MBS6388906 is an antibody targeting PDK4. Also known as PDK4 (PDHK4, [Pyruvate Dehydrogenase [Lipoamide]] Kinase Isozyme 4, Mitochondrial,

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for PDK4. It may not necessarily be applicable to this product.

NCBI GI #	4505693
NCBI GeneID	5166
NCBI Accession #	NP_002603.1
UniProt Primary Accession #	Q16654
UniProt Related Accession #	Q16654
GenBank Nucleotide #	NM_002612
NCBI Official Full Name	pyruvate dehydrogenase kinase, isozyme 4
NCBI Official Synonym Full Names	pyruvate dehydrogenase kinase, isozyme 4
NCBI Official Symbol	PDK4
UniProt Protein Name	[Pyruvate dehydrogenase [lipoamide]] kinase isozyme 4, mitochondrial
UniProt Synonym Protein Names	Pyruvate dehydrogenase kinase isoform 4
UniProt Gene Name	PDK4
UniProt Synonym Gene Names	PDHK4
UniProt Entry Name	PDK4_HUMAN
NCBI Protein Information	pyruvate dehydrogenase kinase, isozyme 4; pyruvate dehydrogenase kinase, isoenzyme 4; pyruvate dehydrogenase, lipoamide, kinase isozyme 4, mitochondrial; [Pyruvate dehydrogenase [lipoamide]] kinase isozyme 4, mitochondrial

UniProt Comments for PDK4	PDHK4: an ubiquitously expressed, atypical protein kinase associated with the mitochondrial matrix. The PDHKs play crucial roles in switching metabolic flux from oxidative phosphorylation towards glycolysis. PDHK4 is abundant in heart, skeletal muscle, kidney, and pancreatic islets. 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: Kinase, protein; Protein kinase, atypical; EC 2.7.11.2; Mitochondrial; ATYPICAL group; PDHK family Chromosomal Location of Human Ortholog: 7q21.3 Cellular Component: mitochondrion; mitochondrial matrix; mitochondrial inner membrane Molecular Function: pyruvate dehydrogenase (acetyl-transferring) kinase activity; ATP binding; protein kinase activity Biological Process: regulation of bone resorption; glucose metabolic process; regulation of acetyl-CoA biosynthetic process from pyruvate; cellular response to starvation; glucose homeostasis; protein amino acid phosphorylation; response to starvation; cellular metabolic process; regulation of fatty acid biosynthetic process; regulation of fatty acid oxidation; insulin receptor signaling pathway; regulation of pH; pyruvate metabolic process
Research Articles on PDK4	**1.** Data show that the orphan nuclear receptor estrogen related receptor gamma (ERRgamma) plays a critical role in hypoxia-mediated activation of pyruvate dehydrogenase kinase 4 (PDK4) gene expression.
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