PDX1 Antibody – Rabbit Polyclonal

PRODUCT OVERVIEW

Product Name	PDX1, Polyclonal Antibody
Full Product Name	PDX1 Conjugated Antibody
Product Gene Name	anti-PDX1 antibody
Product Synonym Names	pancreatic and duodenal homeobox 1; GSF; IPF1; IUF1; IDX-1; MODY4; PDX-1; STF-1
Clonality	Polyclonal
Host	Rabbit
Species Reactivity	Human
Form/Format	0.01M Sodium Phosphate, 0.25M NaCl, pH 7.6, 5mg/ml Bovine Serum Albumin, 0.02% Sodium Azide
Specificity	The antibody detects endogenous level of total PDX1 protein.
Preparation and Storage	Store at 4 degree C for 6 months.
Molecular Weight	46kDa
OMIM	602527
3D Structure	ModBase 3D Structure for Q16654
Immunogen	Synthetic peptide peptide corresponding to a region derived from 18-31 amino acids of human pancreatic and duodenal homeobox 1
Conjugation	Biotin AF350 AF405 AF488 AF555 AF594 AF647 AF680 AF750
Excitation Emission	AF350: 346nm/442nm
Applications Tested/Suitable for anti-PDX1 antibody	Most Applications
Application Notes for anti-PDX1 antibody	Suggested Dilution: AF350 conjugated: most applications: 1:50-1:250 AF405 conjugated: most applications: 1:50-1:250 AF488 conjugated: most applications: 1:50-1:250 AF555 conjugated: most applications: 1:50-1:250 AF594 conjugated: most applications: 1:50-1:250 AF647 conjugated: most applications: 1:50-1:250 AF680 conjugated: most applications: 1:50-1:250 AF750 conjugated: most applications: 1:50-1:250 Biotin conjugated: working with enzyme-conjugated streptavidin, most applications: 1:50-1:1000
Related Product Information for anti-PDX1 antibody	The protein encoded by this gene is a transcriptional activator of several genes, including insulin, somatostatin, glucokinase, islet amyloid polypeptide, and glucose transporter type 2. The encoded nuclear protein is involved in the early development of the pancreas and plays a major role in glucose-dependent regulation of insulin gene expression. Defects in this gene are a cause of pancreatic agenesis, which can lead to early-onset insulin-dependent diabetes mellitus (NIDDM), as well as maturity onset diabetes of the young type 4 (MODY4).
Other Notes	Small volumes of anti-PDX1 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 PDX1 purchase	MBS9442432 is an antibody targeting PDX1. Also known as PDX1 Conjugated Antibody. Reactive in Human. Host: Rabbit.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for PDX1. It may not necessarily be applicable to this product.

NCBI GI #	4505693
NCBI GeneID	5166
NCBI Accession #	NP_002603
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 4
NCBI Official Symbol	PDK4
UniProt Protein Name	[Pyruvate dehydrogenase [lipoamide]] kinase isozyme 4, mitochondrial
UniProt Synonym Protein Names	Pyruvate dehydrogenase kinase isoform 4
Protein Family	Pancreas/duodenum homeobox protein
UniProt Gene Name	PDK4
UniProt Synonym Gene Names	PDHK4
UniProt Entry Name	PDK4_HUMAN
NCBI Protein Information	pyruvate dehydrogenase kinase, isozyme 4
NCBI Summary for PDX1	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 located in the matrix of the mitrochondria and inhibits the pyruvate dehydrogenase complex by phosphorylating one of its subunits, thereby contributing to the regulation of glucose metabolism. Expression of this gene is regulated by glucocorticoids, retinoic acid and insulin. [provided by RefSeq, Jul 2008]

UniProt Comments for PDX1	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 PDX1	**1.** miR-15b-5p acted as a tumor suppressor in osteosarcoma by directly targeting PDK4 and inhibiting its expression.
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