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PDK2 Antibody

Purified Mouse Monoclonal Antibody
Catalog # AO1980a

Product Information

Application	WB, FC, E
Primary Accession	Q15119
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Clone Names	3F2D7
Isotype	IgG2b
Calculated MW	46154
Description	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.
Immunogen	Purified recombinant fragment of human PDK2 (AA: 178-404) expressed in E. Coli.
Formulation	Purified antibody in PBS with 0.05% sodium azide.

Additional Information

Gene ID	5164
Other Names	[Pyruvate dehydrogenase (acetyl-transferring)] kinase isozyme 2, mitochondrial, 2.7.11.2, Pyruvate dehydrogenase kinase isoform 2, PDH kinase 2, PDKII, PDK2, PDHK2
Dilution	WB~~1/500 - 1/2000 FC~~1/200 - 1/400 E~~1/10000
Storage	Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	PDK2 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	PDK2

Synonyms	PDHK2
Function	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.
Cellular Location	Mitochondrion matrix.
Tissue Location	Expressed in many tissues, with the highest level in heart and skeletal muscle, intermediate levels in brain, kidney, pancreas and liver, and low levels in placenta and lung

Background

The protein encoded by this gene belongs to putative adhesion molecule of myelomonocytic-derived cells that mediates sialic-acid dependent binding to cells. Preferentially binds to alpha-2,6-linked sialic acid. The sialic acid recognition site may be masked by cis interactions with sialic acids on the same cell surface. In the immune response, may act as an inhibitory receptor upon ligand induced tyrosine phosphorylation by recruiting cytoplasmic phosphatase(s) via their SH2 domain(s) that block signal transduction through dephosphorylation of signaling molecules. Induces apoptosis in acute myeloid leukemia (in vitro) and CD33 plays potential key roles in the pathogenesis of Alzheimer's disease (AD)

References

1. J Biol Chem. 2006 May 5;281(18):12568-792. Biochemistry. 2004 Oct 26;43(42):13442-51.

Images

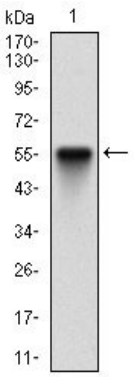
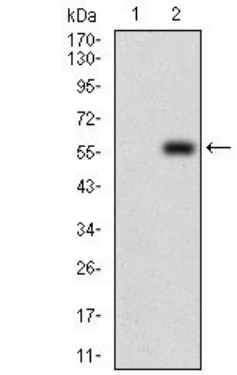


Figure 1: Western blot analysis using PDK2 mAb against human PDK2 (AA: 178-404) recombinant protein. (Expected MW is 51.2 kDa)

Figure 2: Western blot analysis using PDK2 mAb against HEK293 (1) and PDK2 (AA: 178-404)-hIgGFc transfected HEK293 (2) cell lysate.



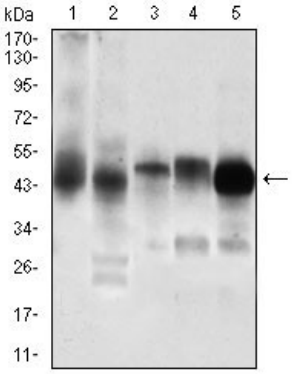


Figure 3: Western blot analysis using PDK2 mouse mAb against Jurkat (1), C6 (2), Cos7 (3), K562 (4), A431 (5) cell lysate.

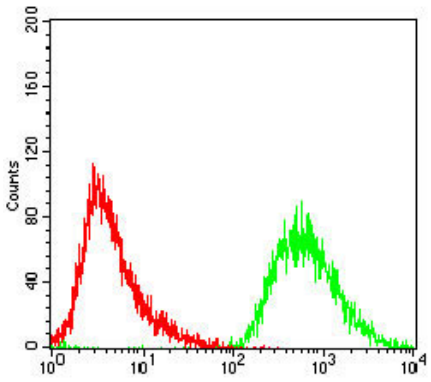


Figure 4: Flow cytometric analysis of A431 cells using PDK2 mouse mAb (green) and negative control (red).