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PDK4 Antibody

Mouse Monoclonal Antibody (Mab)
Catalog # AM1976B

Product Information

Application	WB, E
Primary Accession	Q16654
Other Accession	NP_002603.1
Reactivity	Human, Rat, Mouse
Host	Mouse
Clonality	Monoclonal
Isotype	IgG1
Clone Names	345CT19.6.2
Calculated MW	46469

Additional Information

Gene ID	5166
Other Names	[Pyruvate dehydrogenase (acetyl-transferring)] kinase isozyme 4, mitochondrial, Pyruvate dehydrogenase kinase isoform 4, PDK4, PDHK4
Target/Specificity	Purified His-tagged PDK4 protein(Fragment) was used to produced this monoclonal antibody.
Dilution	WB~~ 1:250 E~~Use at an assay dependent concentration.
Format	Purified monoclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein G column, followed by dialysis against PBS.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	PDK4 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	PDK4
Synonyms	PDHK4
Function	Kinase that plays a key role in 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 in response to prolonged fasting and starvation. Plays an important role in maintaining normal blood glucose levels under starvation, and is involved in the insulin signaling cascade. 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. In the fed state, mediates cellular responses to glucose levels and to a high-fat diet. Regulates both fatty acid oxidation and de novo fatty acid biosynthesis. Plays a role in the generation of reactive oxygen species. Protects detached epithelial cells against anoikis. Plays a role in cell proliferation via its role in regulating carbohydrate and fatty acid metabolism.

Cellular Location Mitochondrion matrix.

Tissue Location Ubiquitous; highest levels of expression in heart and skeletal muscle.

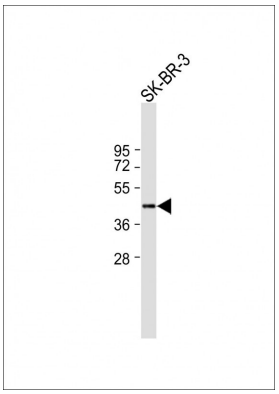
Background

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.

References

Lu, Y., et al. J. Lipid Res. 49(12):2582-2589(2008)
Wynn, R.M., et al. J. Biol. Chem. 283(37):25305-25315(2008)
Cadoudal, T., et al. Diabetes 57(9):2272-2279(2008)
Tsintzas, K., et al. J. Clin. Endocrinol. Metab. 92(10):3967-3972(2007)
Degenhardt, T., et al. J. Mol. Biol. 372(2):341-355(2007)

Images



All lanes : Anti-PDK4 Antibody at 1:1000 dilution + SK-BR-3 cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Mouse IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 50 kDa Blocking/Dilution buffer: 5% NFDM/TBST.