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PP2Cκ Polyclonal Antibody

Catalog # AP72015

Product Information

Application	WB, IHC-P
Primary Accession	Q8N3J5
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Calculated MW	40997

Additional Information

Gene ID	152926
Other Names	PPM1K; PP2CM; Protein phosphatase 1K; mitochondrial; PP2C domain-containing protein phosphatase 1K; PP2C-like mitochondrial protein; PP2C-type mitochondrial phosphoprotein phosphatase; PTMP; Protein phosphatase 2C isoform kappa; PP2C-kappa
Dilution	WB~~Western Blot: 1/500 - 1/2000. Immunohistochemistry: 1/100 - 1/300. ELISA: 1/40000. Not yet tested in other applications. IHC-P~~N/A
Format	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.09% (W/V) sodium azide.
Storage Conditions	-20℃

Protein Information

Name	PPM1K {ECO:0000303|PubMed:23086801, ECO:0000312|HGNC:HGNC:25415}
Function	Serine/threonine-protein phosphatase component of macronutrients metabolism. Forms a functional kinase and phosphatase pair with BCKDK, serving as a metabolic regulatory node that coordinates branched-chain amino acids (BCAAs) with glucose and lipid metabolism via two distinct phosphoprotein targets: mitochondrial BCKDHA subunit of the branched-chain alpha-ketoacid dehydrogenase (BCKDH) complex and cytosolic ACLY, a lipogenic enzyme of Krebs cycle (PubMed:17336929, PubMed:17374715, PubMed:19411760, PubMed:22291014, PubMed:22589535, PubMed:23086801, PubMed:29779826). At high levels of branched-chain ketoacids, dephosphorylates and activates mitochondrial BCKDH complex, a multisubunit complex consisting of three multimeric components each involved in different steps of BCAA catabolism: E1 composed of BCKDHA and BCKDHB, E2 core composed of DBT monomers, and E3 composed of DLD monomers. Tightly associates with the E2

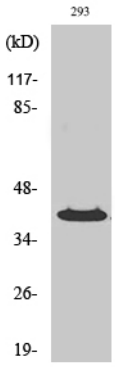
component of BCKDH complex and dephosphorylates BCKDHA on Ser-337 (PubMed:17336929, PubMed:17374715, PubMed:19411760, PubMed:22291014, PubMed:22589535, PubMed:23086801, PubMed:29779826). Regulates the reversible phosphorylation of ACLY in response to changes in cellular carbohydrate abundance such as occurs during fasting to feeding metabolic transition. At fasting state, appears to dephosphorylate ACLY on Ser- 455 and inactivate it. Refeeding stimulates MLXIPL/ChREBP transcription factor, leading to increased BCKDK to PPM1K expression ratio, phosphorylation and activation of ACLY that ultimately results in the generation of malonyl-CoA and oxaloacetate immediate substrates of de novo lipogenesis and gluconeogenesis, respectively (PubMed:29779826). Recognizes phosphosites having SxS or RxxS motifs and strictly depends on Mn(2+) ions for the phosphatase activity (PubMed:29779826). Regulates Ca(2+)-induced opening of mitochondrial transition pore and apoptotic cell death (PubMed:17374715).

Cellular Location Mitochondrion matrix. Note=Detected in the cytosolic compartment of liver cells. {ECO:0000250|UniProtKB:A6K136}

Background

Regulates the mitochondrial permeability transition pore and is essential for cellular survival and development.

Images



Western Blot analysis of various cells using PP2Cκ Polyclonal Antibody

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