

BCKDK Rabbit mAb

Catalog # AP76402

Product Information

Application	WB
Primary Accession	O14874
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Monoclonal Antibody
Calculated MW	46360

Additional Information

Gene ID	10295
Other Names	BCKDK
Dilution	WB~~1/500-1/1000
Format	Liquid

Protein Information

Name	BCKDK {ECO:0000303 PubMed:29779826, ECO:0000312 HGNC:HGNC:16902}
Function	<p>Serine/threonine-protein kinase component of macronutrients metabolism. Forms a functional kinase and phosphatase pair with PPM1K, 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:24449431, PubMed:29779826, PubMed:37558654). Phosphorylates and inactivates 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. Associates with the E2 component of BCKDH complex and phosphorylates BCKDHA on Ser-337, leading to conformational changes that interrupt substrate channeling between E1 and E2 and inactivates the BCKDH complex (PubMed:29779826, PubMed:37558654). Phosphorylates ACLY on Ser-455 in response to changes in cellular carbohydrate abundance such as occurs during fasting to feeding metabolic transition. 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</p>

(PubMed:[29779826](#)). Recognizes phosphosites having SxxE/D canonical motif
(PubMed:[29779826](#)).

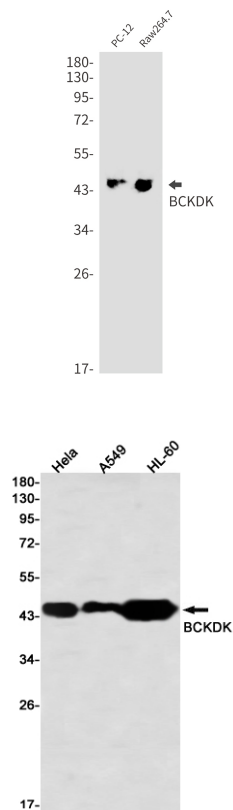
Cellular Location

Mitochondrion matrix {ECO:0000250 | UniProtKB:Q00972,
ECO:0000305 | PubMed:24449431} Note=Detected in the cytosolic
compartment of liver cells {ECO:0000250 | UniProtKB:Q00972}

Tissue Location

Ubiquitous.

Images



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