

BCKDK Rabbit mAb
Catalog # AP76402**Specification****BCKDK Rabbit mAb - Product Information**

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

BCKDK Rabbit mAb - Additional Information

Gene ID 10295

Other Names

BCKDK

Dilution

WB~~1/500-1/1000

Format

Liquid

BCKDK Rabbit mAb - Protein Information**Name** BCKDK {ECO:0000303|PubMed:29779826, ECO:0000312|HGNC:HGNC:16902}**Function**

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](http://www.uniprot.org/citations/24449431), PubMed: [29779826](http://www.uniprot.org/citations/29779826), PubMed: [37558654](http://www.uniprot.org/citations/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](http://www.uniprot.org/citations/29779826), PubMed: [37558654](http://www.uniprot.org/citations/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 (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.

BCKDK Rabbit mAb - Protocols

Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

BCKDK Rabbit mAb - Images



