

**Mouse Bckdk Antibody (Center) Blocking peptide**  
**Synthetic peptide**  
**Catalog # BP13798c****Specification**

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**Mouse Bckdk Antibody (Center) Blocking peptide - Product Information**Primary Accession [O55028](#)**Mouse Bckdk Antibody (Center) Blocking peptide - Additional Information**

Gene ID 12041

**Other Names**

[3-methyl-2-oxobutanoate dehydrogenase [lipoamide]] kinase, mitochondrial, Branched-chain alpha-ketoacid dehydrogenase kinase, BCKD-kinase, BCKDHKIN, Bckdk

**Target/Specificity**

The synthetic peptide sequence used to generate the antibody AP13798c was selected from the Center region of Mouse Bckdk. A 10 to 100 fold molar excess to antibody is recommended. Precise conditions should be optimized for a particular assay.

**Format**

Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

**Storage**

Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

**Precautions**

This product is for research use only. Not for use in diagnostic or therapeutic procedures.

**Mouse Bckdk Antibody (Center) Blocking peptide - Protein Information****Name** Bckdk**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 (By similarity). 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-334, leading to conformational changes that interrupt substrate channeling between E1 and E2 and inactivates the BCKDH complex (By similarity). 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 (By similarity). Recognizes phosphosites having SxxE/D canonical motif (By similarity).

**Cellular Location**

Mitochondrion matrix. Mitochondrion {ECO:0000250|UniProtKB:O14874}

**Tissue Location**

Ubiquitous.

**Mouse Bckdk Antibody (Center) Blocking peptide - Protocols**

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

- [Blocking Peptides](#)

**Mouse Bckdk Antibody (Center) Blocking peptide - Images****Mouse Bckdk Antibody (Center) Blocking peptide - Background**

Catalyzes the phosphorylation and inactivation of the branched-chain alpha-ketoacid dehydrogenase complex, the key regulatory enzyme of the valine, leucine and isoleucine catabolic pathways. Key enzyme that regulate the activity state of the BCKD complex (By similarity).

**Mouse Bckdk Antibody (Center) Blocking peptide - References**

Pagliarini, D.J., et al. Cell 134(1):112-123(2008) Lee, J., et al. Mol. Cell Proteomics 6(4):669-676(2007) Hutson, S.M. Biochem. J. 400 (1), E1-E3 (2006) :Joshi, M.A., et al. Biochem. J. 400(1):153-162(2006) Trinidad, J.C., et al. Mol. Cell Proteomics 5(5):914-922(2006)