

**Mouse Bckdk Antibody (Center)**  
**Affinity Purified Rabbit Polyclonal Antibody (Pab)**  
**Catalog # AP13798c**

**Specification**

---

**Mouse Bckdk Antibody (Center) - Product Information**

Application	WB,E
Primary Accession	<a href="#">O55028</a>
Other Accession	<a href="#">NP_033869.1</a>
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	46588
Antigen Region	159-188

**Mouse Bckdk Antibody (Center) - 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**

This Mouse Bckdk antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 159-188 amino acids from the Central region of mouse Bckdk.

**Dilution**

WB~~1:1000

**Format**

Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.

**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**

Mouse Bckdk Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

**Mouse Bckdk Antibody (Center) - 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

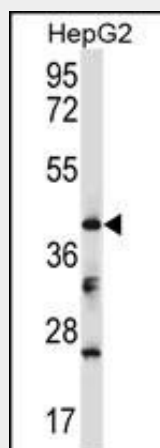
Ubiquitous.

### Mouse Bckdk Antibody (Center) - Protocols

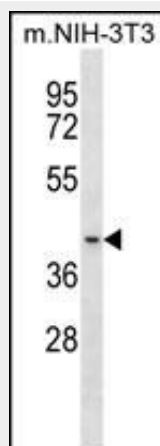
Provided below are standard protocols that you may find useful for product applications.

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

### Mouse Bckdk Antibody (Center) - Images



Mouse Bckdk Antibody (Center) (Cat. #AP13798c) western blot analysis in HepG2 cell line lysates (35ug/lane). This demonstrates the Bckdk antibody detected the Bckdk protein (arrow).



Mouse Bckdk Antibody (Center) (Cat. #AP13798c) western blot analysis in mouse NIH-3T3 cell line lysates (35ug/lane). This demonstrates the Bckdk antibody detected the Bckdk protein (arrow).

#### **Mouse Bckdk Antibody (Center) - 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) - 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)