

Store at  
-20°C

#66986

# PhosphoPlus® BCKDH-E1 $\alpha$ (Ser293) Antibody Duet



**Support:** +1-978-867-2388 (U.S.)  
www.cellsignal.com/support

**Orders:** 877-616-2355 (U.S.)  
orders@cellsignal.com

**Entrez-Gene ID** #593  
**UniProt ID** #P12694

New 05/20

**For Research Use Only. Not For Use In Diagnostic Procedures.**

Products Included	Product #	Quantity	Mol. Wt.	Isotype
BCKDH-E1 $\alpha$ (E4T3D) Rabbit mAb	90198	100 $\mu$ l	49 kDa	Rabbit IgG
Phospho-BCKDH-E1 $\alpha$ (Ser293) (E2V6B) Rabbit mAb	40368	100 $\mu$ l	49 kDa	Rabbit IgG

See [www.cellsignal.com](http://www.cellsignal.com) for individual component applications, species cross-reactivity, dilutions and additional application protocols.

**Description:** PhosphoPlus® Duets from Cell Signaling Technology (CST) provide a means to assess protein activation status. Each Duet contains an activation-state and total protein antibody to your target of interest. These antibodies have been selected from CST's product offering based upon superior performance in specified applications.

**Background:** Branched-chain amino acids (BCAAs) leucine, isoleucine, and valine are essential amino acids in mammals, but elevated levels of BCAAs have been implicated in cardiovascular and metabolic disorders (1). The branched-chain  $\alpha$ -keto acid dehydrogenase complex (BCKDH) catalyzes the rate-limiting step in the BCAA degradation pathway (2,3). Branched-chain  $\alpha$ -keto acid decarboxylase (BCKDH-E1) is one of three enzymatic components in this complex (3). The  $\alpha$  subunit of BCKDH-E1 (BCKDH-E1 $\alpha$ ) is critical for the regulation of BCKDH. Phosphorylation of BCKDH-E1 $\alpha$  was shown to play a key role in regulating the enzymatic activity of this complex (3-5).

Phosphorylation of BCKDH-E1 $\alpha$  at Ser293 inactivates BCKDH (3,4). A significant elevation in plasma BCAA levels was reported to correlate with increased phosphorylation of BCKDH-E1 $\alpha$  at Ser293 and suppressed BCKDH activity in the liver of diabetic mice (5).

**Specificity/Sensitivity:** BCKDH-E1 $\alpha$  (E4T3D) Rabbit mAb recognizes endogenous levels of total BCKDH-E1 $\alpha$  protein. Phospho-BCKDH-E1 $\alpha$  (Ser293) (E2V6B) Rabbit mAb recognizes endogenous levels of BCKDH-E1 $\alpha$  protein only when phosphorylated at Ser292 of mature human BCKDH-E1 $\alpha$ , Ser293 of mature mouse BCKDH-E1 $\alpha$ , or Ser293 of mature rat BCKDH-E1 $\alpha$ .

**Source/Purification:** Monoclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues near the carboxy terminus of human BCKDH-E1 $\alpha$  protein and by immunizing animals with a synthetic phospho-peptide corresponding to residues surrounding Ser292 of mature human BCKDH-E1 $\alpha$  protein, which corresponds to Ser293 of mature mouse BCKDH-E1 $\alpha$  protein and Ser293 of mature rat BCKDH-E1 $\alpha$  protein.

**Storage:** Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100  $\mu$ g/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. *Do not aliquot the antibody.*

**For product specific protocols and a complete listing of recommended companion products please see the product web page at [www.cellsignal.com](http://www.cellsignal.com).**

#### Background References:

- (1) Li, T. et al. (2017) *Cell Metab* 25, 374-85.
- (2) Shin, A.C. et al. (2014) *Cell Metab* 20, 898-909.
- (3) Lu, G. et al. (2009) *J Clin Invest* 119, 1678-87.
- (4) Harris, R.A. et al. (1997) *Adv Enzyme Regul* 37, 271-93.
- (5) Lian, K. et al. (2015) *Diabetes* 64, 49-59.

Thank you for your recent purchase. If you would like to provide a review visit [www.cellsignal.com/comments](http://www.cellsignal.com/comments).

[www.cellsignal.com](http://www.cellsignal.com)

© 2020 Cell Signaling Technology, Inc.

PhosphoPlus and Cell Signaling Technology are trademarks of Cell Signaling Technology, Inc.

**Applications:** W—Western IP—Immunoprecipitation IHC—Immunohistochemistry ChIP—Chromatin Immunoprecipitation IF—Immunofluorescence F—Flow cytometry E-P—ELISA-Peptide **Species Cross-Reactivity:** H—human M—mouse R—rat Hm—hamster Mk—monkey Mi—mink C—chicken Dm—D. melanogaster X—Xenopus Z—zebrafish B—bovine Dg—dog Pg—pig Sc—S. cerevisiae Ce—C. elegans Hr—Horse All—all species expected **Species enclosed in parentheses are predicted to react based on 100% homology.**