Revision 1

Store at -20C

#66986

PhosphoPlus® BCKDH-E1α (Ser293) Antibody Duet

Cell Signaling TECHNOLOGY®

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For Research Use Only. Not for Use in Diagnostic Procedures.

UniProt ID:	Entrez-Gene Id:
#P12694	593

Product Includes	Product #	Quantity	Mol. Wt	Isotype/Source
BCKDH-E1α (E4T3D) Rabbit mAb	90198	100 µl	49 kDa	Rabbit IgG
Phospho-BCKDH-E1α (Ser293) (E2V6B) Rabbit mAb	40368	100 µl	49 kDa	Rabbit IgG

Please visit cellsignal.com for individual component applications, species cross-reactivity, dilutions, protocols, and additional product information.

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.

Storage

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

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 α-keto acid dehydrogenase complex (BCKDH) catalyzes the rate-limiting step in the BCAA degradation pathway (2,3). Branched-chain α-keto acid decarboxylase (BCKDH-E1) is one of three enzymatic components in this complex (3). The α subunit of BCKDH-E1 (BCKDH-E1α) is critical for the regulation of BCKDH. Phosphorylation of BCKDH-E1α was shown to play a key role in regulating the enzymatic activity of this complex (3-5).
Phosphorylation of BCKDH-E1α at Ser293 inactivates BCKDH (3,4). A significant elevation in plasma BCAA levels was reported to correlate with increased phosphorylation of BCKDH-E1α at Ser293 and suppressed BCKDH activity in the liver of diabetic mice (5).

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.

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