

Store at
-20C
#34995

Branched-Chain Amino Acid Metabolism Antibody Sampler Kit



Orders: 877-616-CELL (2355)
orders@cellsignal.com

Support: 877-678-TECH (8324)

Web: info@cellsignal.com
cellsignal.com

1 Kit (6 x 20 microliters)

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

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

Product Includes	Product #	Quantity	Mol. Wt	Isotype/Source
BCAT1 (D6D4K) Rabbit mAb	88785	20 µl	43 kDa	Rabbit IgG
BCAT2 (D8K3O) Rabbit mAb	79764	20 µl	39 kDa	Rabbit IgG
BCKDH-E1α (E4T3D) Rabbit mAb	90198	20 µl	49 kDa	Rabbit IgG
Phospho-BCKDH-E1α (Ser293) (E2V6B) Rabbit mAb	40368	20 µl	49 kDa	Rabbit IgG
Anti-rabbit IgG, HRP-linked Antibody	7074	100 µl		Goat

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

Description

The Branched-Chain Amino Acid Metabolism Antibody Sampler Kit provides an economical means of detecting select components involved in the branched-chain amino acid (BCAA) metabolism pathway. The kit includes enough antibodies to perform two western blot experiments with each primary antibody.

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 antibodies.*

Background

BCAT1 and BCAT2 are cytosolic and mitochondrial branched-chain aminotransferases, respectively (1,2). Research studies have implicated BCAT1 in distant metastasis in patients with advanced colorectal cancer (3). Disruption of BCAT2 in mice leads to higher levels of plasma branched-chain amino acids (BCAAs), reduced adiposity and body weight, and increased energy expenditure, suggesting its role in regulating insulin sensitivity (4). BCAAs leucine, isoleucine, and valine are essential amino acids in mammals, but elevated levels of BCAAs have been implicated in cardiovascular and metabolic disorders (5). The branched-chain α-keto acid dehydrogenase complex (BCKDH) catalyzes the rate-limiting step in the BCAA degradation pathway (6,7). Branched-chain α-keto acid decarboxylase (BCKDH-E1) is one of three enzymatic components in this complex (7). 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 (7-9). Phosphorylation of BCKDH-E1α at Ser293 inactivates BCKDH (7,8). 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 (9).

Background References

- Bledsoe, R.K. et al. (1997) *Biochim Biophys Acta* 1339, 9-13.
- Suryawan, A. et al. (1998) *Am J Clin Nutr* 68, 72-81.
- Yoshikawa, R. et al. (2006) *World J Gastroenterol* 12, 5884-9.
- She, P. et al. (2007) *Cell Metab* 6, 181-94.
- Li, T. et al. (2017) *Cell Metab* 25, 374-385.
- Shin, A.C. et al. (2014) *Cell Metab* 20, 898-909.
- Lu, G. et al. (2009) *J Clin Invest* 119, 1678-87.
- Harris, R.A. et al. (1997) *Adv Enzyme Regul* 37, 271-93.
- Lian, K. et al. (2015) *Diabetes* 64, 49-59.

Trademarks and Patents

Cell Signaling Technology is a trademark of Cell Signaling Technology, Inc.

All other trademarks are the property of their respective owners. Visit cellsignal.com/trademarks for more information.

Limited Uses

Except as otherwise expressly agreed in a writing signed by a legally authorized representative of CST, the following terms apply to Products provided by CST, its affiliates or its distributors. Any Customer's terms and conditions that are in addition to, or different from, those contained herein, unless separately accepted in writing by a legally authorized representative of CST, are rejected and are of no force or effect.

Products are labeled with For Research Use Only or a similar labeling statement and have not been approved, cleared, or licensed by the FDA or other regulatory foreign or domestic entity, for any purpose. Customer shall not use any Product for any diagnostic or therapeutic purpose, or otherwise in any manner that conflicts with its labeling statement. Products sold or licensed by CST are provided for Customer as the end-user and solely for research and development uses. Any use of Product for diagnostic, prophylactic or therapeutic purposes, or any purchase of Product for resale (alone or as a component) or other commercial purpose, requires a separate license from CST. Customer shall (a) not sell, license, loan, donate or otherwise transfer or make available any Product to any third party, whether alone or in combination with other materials, or use the Products to manufacture any commercial products, (b) not copy, modify, reverse engineer, decompile, disassemble or otherwise attempt to discover the underlying structure or technology of the Products, or use the Products for the purpose of developing any products or services that would compete with CST products or services, (c) not alter or remove from the Products any trademarks, trade names, logos, patent or copyright notices or markings, (d) use the Products solely in accordance with CST Product Terms of Sale and any applicable documentation, and (e) comply with any license, terms of service or similar agreement with respect to any third party products or services used by Customer in connection with the Products.