

Branched Chain Amino Acid Assay Kit

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CATALOG #
AAA11442

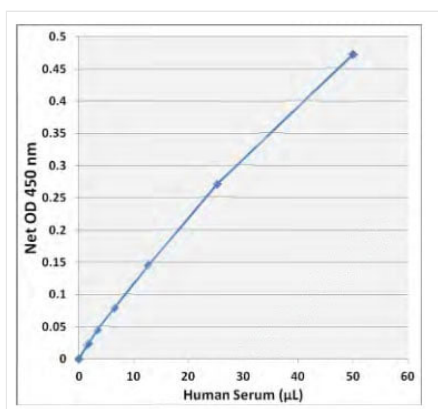
PRODUCT SYNONYMS

Branched Chain Amino Acid; Branched Chain Amino Acid Assay Kit; Branched Chain Amino Acid assay kit

PRODUCT SPECIFICATIONS

Sequence Length	298
Preparation and Storage	Upon receipt, store the L-Leucine Standard, WST-1 Reagent, and Leucine Dehydrogenase at -20 degree C. The WST-1 reagent is light sensitive and must be stored accordingly. Avoid multiple freeze/thaw cycles. Store the NAD ⁺ at -80 degree C. Store the 5X Assay Buffer at 4 degree C.

IMAGES



Standard Curve (Sample)

ADDITIONAL INFORMATION

Related Product Information for Branched Chain Amino Acid assay kit	Background: Amino acids are organic compounds that contain amine (-NH2) and carboxyl (-COOH) functional groups, as well as a side-chain (R group) which confers uniqueness to each amino acid. The main elements of an amino acid are carbon, hydrogen, oxygen, and nitrogen, although other elements can be found in some amino acids. About 500 amino acids are known, but only 20 are coded in the human genome. A Branched Chain Amino Acid (BCAA) contains a branch structure side chain with one central carbon connected to at least three other carbon atoms. The only three BCAAs coded by the human genome are leucine, valine, and isoleucine. BCAAs play key roles in animal metabolism and physiology. BCAAs enhance protein synthesis, signaling pathways, and glucose metabolism. On a physiological level, BCAAs function within the immune system. BCAAs are degraded by dehydrogenase and decarboxylase enzymes, are found in immune cells, and are required for lymphocyte growth, proliferation, and activity. BCAAs are transported into the brain by the same enzyme used to transport aromatic amino acids (tryptophan, tyrosine, and phenylalanine). Once in the brain BCAAs contribute to protein synthesis, neurotransmitter synthesis, and energy production. In humans, rats and mice models, BCAA levels in the blood are elevated in obese, insulin resistant models of diet-induced diabetes. This result suggests the possibility that BCAAs promote obesity and diabetes pathogenesis. In mice fed limited amounts of BCAAs, glucose tolerance is improved and weight loss is observed. Branched Chain Amino Acid Assay Kit is a simple colorimetric assay that measures the total amount of free BCAAs (Leucine, Isoleucine, and Valine) present in foods or biological samples in a 96-well microtiter plate format. BCAAs in polypeptide chains (peptides and proteins) are not detected. Each kit provides sufficient reagents to perform up to 192 assays*, including blanks, LLeucine standards and unknown samples. Sample BCAA concentrations are determined by comparison with a known L-Leucine standard. The kit has a detection sensitivity limit of 15.6 uM BCAAs. Principle of the Assay: Branched Chain Amino Acid Assay Kit measures BCCAs within food or biological samples. L-Leucine, L-valine, and L-isoleucine are converted by Leucine Dehydrogenase (in the presence of excess NAD+) into their corresponding alpha-keto products (alpha-ketoisocaproate, alpha-ketovalerate, or alpha-ketoisovalerate) plus ammonia and NADH. The converted NADH is then detected colorimetrically with WST-1 which is converted to the formazan form in the presence of an electron mediator. Samples are compared to a known concentration of L-Leucine standard within the 96-well microtiter plate format. Samples and standards are then read with a standard 96-well colorimetric plate reader (Figure 1).
Product Categories/Family for Branched Chain Amino Acid assay kit	Metabolism Research; Cellular Metabolism; Amino Acid Metabolism

NCBI AND UNIPROT INFORMATION

NCBI GI #	589080990
NCBI Official Full Name	Branched chain amino acid

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

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Online datasheet: <https://stage.aaabiotech.com/assay-kits/branched-chain-amino-acid/11442>