CREATIVE BIOMART®
Assay Kit

?-Hydroxybutyrate (Ketone Body) Colorimetric Assay Kit

Product Information

Cat.No.

Kit-2040

Size

96 wells

Description

β-Hydroxybutyrate (β-HB; 3-hydroxybutyric acid) is a "ketone body" which is produced in the liver, mainly from the oxidation of fatty acids, and is exported to peripheral tissues for use as an energy source. The term "ketone body" refers to three molecules, acetoacetate, β-HB, and acetone. β-HB and acetoacetate transport energy from the liver to the other tissues and acetone is generated by spontaneous decarboxylation of acetoacetate. The presence of ketosis may be normal or pathologic. Normally ketosis can indicate that lipid metabolism has been activated and the pathway of lipid degradation is intact. Normal ketosis is prevalent in many circumstances such as during fasting, after prolonged exercise or after a high fat diet. Pathological causes of ketosis include multiple organ failure, diabetes, childhood hypoglycemia, corticosteroid or growth hormone deficiency, intoxication with alcohol or salicylates and several inborn errors of metabolism. In acutely ill patients, these ketone bodies can accumulate in the body to cause ketoacidosis, which leads to the potentially life threatening condition known as metabolic acidosis. The presence and degree of ketosis can be determined by measuring blood levels of β-HB. Ordinarily, β-HB accounts for approximately 75% of the ketone bodies in serum. Measurement of β-HB provides a reliable index of the level of ketoacidosis, including the detection of subclinical ketosis. In diabetics, β-HB measurements (and blood glucose) can be used for the assessment of the severity of diabetic coma and is essential for the exclusion of hyperosmolar non-ketotic diabetic coma. The measurement of β-HB is also used to monitor insulin requirements, based on existing hyperketonemia. β-HB has more recently been evaluated for use in neurodegenerative diseases and inhibition of adipocyte lipolysis. Theβ-HB (Ketone Body) Assay Kit provides a simple, reproducible, and sensitive tool for measuring β-HB levels in plasma, serum, urine, cell lysates, or tissue homogenates. The method for β-HB determination is based

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upon the oxidation of D-3-Hydroxybutyrate to acetoacetate by the enzyme 3-hydroxybutyrate dehydrogenase.16 Concomitant with this oxidation, the cofactor NAD+ is reduced to NADH. In the presence of diaphorase, NADH reacts with the colorimetric detector WST-1 to produce a formazan dye with an absorbance maximum at 445-455 nm. The absorbance of the dye is directly proportional to the β-HB concentration.

Storage

-20°C

Kit Components

β-HB Assay Buffer: 1 vial β-Hydroxybutyrate Standard: 2 vialsβ-HB Enzyme Solution: 2 vialsβ-HB Colorimetric Detector: 2 vials 96-Well Solid Plate (Colorimetric Assay): 1 plate 96-Well Cover Sheet: 1 cover

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