Creative Enzymes®

Native Alcaligenes faecalis 3-Hydroxybutyrate Dehydrogenase

Cat. No. NATE-0005

Lot. No. (See product label)

Introduction

Description	In mammalian systems, β-hydroxybutyrate dehydrogenase is localized on the inner mitochondrial membrane and requires phosphatidyl choline for activity. In contrast, the enzyme from Pseudomonas is a soluble cytosolic enzyme that does not require a phospholipid allosteric activator. The enzyme is required for the utilization of ketone bodies as a source of metabolic energy. It catalyzes the oxidation of 3-hydroxybutyrate to acetoacetate, the first step in the conversion of ketone bodies to citric acid, which is then further metabolized via the tricarboxylic acid cycle (Krebs cycle).
Applications	Useful for enzymatic determination of ketone bodies
Synonyms	3-hydroxybutyrate dehydrogenase; 3-HBDH; NAD-β-hydroxybutyRate dehydrogenase; hydroxybutyRate oxidoreductase; β-hydroxybutyRate dehydrogenase; D-β-hydroxybutyRate dehydrogenase; D-3-hydroxybutyRate dehydrogenase; D-(–)-3-hydroxybutyRate dehydrogenase; β-hydroxybutyric acid dehydrogenase; 3-D-hydroxybutyRate dehydrogenase; β-hydroxybutyric dehydrogenase; EC 1.1.1.30; 9028-38-0

Product Information

Source	Alcaligenes faecalis
Appearance	White powder
Form	Freeze dried powder
EC Number	EC 1.1.1.30
CAS No.	9028-38-0
Molecular Weight	60±5 kDa (TSK G–3000SW); 30±5 kDa (SDS–PAGE)
Activity	> 1,500 U/mg
Contaminants	NADH oxidase < 0.0004%
Isoelectric point	pH 5.0±0.2
pH Stability	5.5-11.0 (37°C, 60 mins)
Optimum pH	8.5
Thermal stability	Stable at 37°C and below (pH 8.5, 10 mins)
Optimum temperature	45°C (Tris–HCl buffer)
Michaelis Constant	D–3–Hydroxybutyrate 1.6 × 10-3M
Unit Definition	One unit is defined as the amount of enzyme which converts 1 µ mole of 3–Hydroxybutylate to acetoacetate per minute at 37°C under the conditions specified in the assay procedure.

Storage and Shipping Information

Storage	−20°C