

## Native *Rhodopseudomonas sphaeroides* $\beta$ -Hydroxybutyrate Dehydrogenase

Cat. No. NATE-0004

Lot. No. (See product label)

### Introduction

**Description** In mammalian systems,  $\beta$ -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** Suitable for the determination of acetoacetate and D (-)-3-hydroxybutyrate by the method of Williamson, D. H., and Mellanby, J., *Methods of Enzymatic Analysis*, Bergmeyer, H., ed., 2nd edition, 4, 1836 (1974).

**Synonyms** 3-hydroxybutyrate dehydrogenase; 3-HBDH; NAD- $\beta$ -hydroxybutyrate dehydrogenase; hydroxybutyrate oxidoreductase;  $\beta$ -hydroxybutyrate dehydrogenase; D- $\beta$ -hydroxybutyrate dehydrogenase; D-3-hydroxybutyrate dehydrogenase; D-(-)-3-hydroxybutyrate dehydrogenase;  $\beta$ -hydroxybutyric acid dehydrogenase; 3-D-hydroxybutyrate dehydrogenase;  $\beta$ -hydroxybutyric dehydrogenase; EC 1.1.1.30; 9028-38-0

### Product Information

**Source** *Rhodopseudomonas sphaeroides*

**Form** Lyophilized powder containing Tris buffer salts

**EC Number** EC 1.1.1.30

**CAS No.** 9028-38-0

**Activity** 250-750 units/mg protein

**Unit Definition** One unit will oxidize 1.0  $\mu$ mole of D- $\beta$ -hydroxybutyrate to acetoacetate per min at pH 7.8 at 37°C.

### Storage and Shipping Information

**Storage** -20°C