

## Native *Bacillus subtilis* L-Alanine Dehydrogenase

Cat. No. NATE-0043

Lot. No. (See product label)

### Introduction

**Description** L-Alanine dehydrogenase is an A-stereospecific dehydrogenase that catalyzes the reversible deamination of L-alanine to pyruvate and ammonium. It is important for the generation of pyruvate during sporulation. L-Alanine dehydrogenase from *Bacillus subtilis* has a predominately ordered kinetic mechanism in which NAD binds before L-alanine. Subsequently, ammonia, pyruvate, and NADH are released in that specific order. Optimal pH for the amination reaction is 8.8-9.0, whereas it is 10-10.5 for the deamination reaction. The enzyme is inactivated by divalent metal ions and p-chloromercuribenzoate, mercuric ion being most effective. The inactivation may be reversed by L- or D-cysteine.

**Applications** L-Alanine dehydrogenase converts L-alanine to pyruvate and ammonium. L-Alanine dehydrogenase from *Bacillus subtilis* may be used to study enzyme inactivation and protection

**Synonyms** L-Alanine Dehydrogenase; Alanine dehydrogenase; EC 1.4.1.1; 9029-06-5; AlaDH; NAD<sup>+</sup>-linked alanine dehydrogenase; alpha-alanine dehydrogenase; NAD<sup>+</sup>-dependent alanine dehydrogenase; alanine oxidoreductase; NADH-dependent alanine dehydrogenase

### Product Information

**Source** *Bacillus subtilis*

**Form** Type I, buffered aqueous glycerol solution, Solution in 50% glycerol containing 10 mM potassium phosphate buffer, pH 7.7; Type II, ammonium sulfate suspension, Suspension in 2.4 M (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub> solution, pH 7.0.

**EC Number** EC 1.4.1.1

**CAS No.** 9029-06-5

**Activity** Type I, ~30 units/mg protein (Lowry); Type II, > 20 units/mg protein (Lowry).

**Unit Definition** One unit will convert 1.0 μmole of L-alanine to pyruvate and NH<sub>3</sub> per min at pH 10.0 at 25°C.

### Storage and Shipping Information

**Storage** -20°C