Creative Enzymes®

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+-linked alanine dehydrogenase; alpha-alanine dehydrogenase; NAD+-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 (NH4)2SO4 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 NH3 per min at pH 10.0 at 25°C.

Storage and Shipping Information

Storage	−20°C