Creative Enzymes®

Native Bacillus stearothermophilus Alanine Dehydrogenase

Cat. No. NATE-1899

Lot. No. (See product label)

Introduction

Description	L-Alanine dehydrogenase is 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.
Applications	The enzyme is useful for determination of L-alanine.
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 stearothermophilus
Appearance	Lyophilized
EC Number	EC 1.4.1.1
CAS No.	9029-06-5
Molecular Weight	ca. 230,000; Subunit molecular weight : ca. 38,000.
Specific Activity	more than 55 U/mg protein
Contaminants	(as AlaDH activity = 100 %) NADH oxidase: <0.01 %; Lactate dehydrogenase: <0.10 %.
pH Stability	7.0 - 11.5
Optimum pH	10.4
Thermal stability	No detectable decrease in activity up to 70 °C.
Michaelis Constant	(125 mM Glycine-NaOH buffer, pH 10.5, at 30 °C) L-Alanine: 10.0 mM; NAD+: 0.26 mM.
Specificity	L-Alanine: 100 %; L-Leucine: 0 %; L-Isoleucine: 0 %.
Unit Definition	One unit of activity is defined as the amount of AlaDH that forms 1 μmol of NADH per minute at 30 °C.
Reaction	L-Alanine + NAD+ + H2O ⟷ Pyruvate + NH4+ + NADH

Storage and Shipping Information

Storage	Stable at -20 °C for at least one year.