Creative Enzymes®

Native Bovine Pyruvate Carboxylase

Cat. No. NATE-0508

Lot. No. (See product label)

Introduction

Description	Pyruvate carboxylase catalyzes the carboxylation of pyruvate to oxaloacetate. Pyruvate carboxylase is a mitochondrial protein that has a biotin prosthetic group that requiries magnesium or manganese and acetyl CoA.
Applications	Pyruvate is critical for gluconeogenesis, lipogenesis, glyceroneogenesis, neurotransmitter biosynthesis and glucose-induced insulin, and is used to study these pr ocesses. The enzyme from Creative Enzymes has been used as a positive control during the assay of pyruvate carboxylase activity in cell-free extracts of Corynebacterium glutamicum.
Synonyms	Pyruvate carboxylase; PC; EC 6.4.1.1; 9014-19-1; pyruvic carboxylase

Product Information

Species	Bovine
Source	Bovine liver
Form	buffered aqueous glycerol solution; Solution in 50% glycerol containing 0.05 M Tris-HCl, pH 7.4, 2 mM magnesium acetate and 1 mM EDTA.
EC Number	EC 6.4.1.1
CAS No.	9014-19-1
Activity	5-25 units/mg protein (BCA)
Concentration	> 0.5 mg/mL
Pathway	Biosynthesis of amino acids, organism-specific biosystem (from KEGG) Biosynthesis of amino acids, conserved biosystem (from KEGG) Biotin transport and metabolism, organism-specific biosystem (from REACTOME) Carbon metabolism, organism-specific biosystem (from KEGG) Carbon metabolism, conserved biosystem (from KEGG) Citrate cycle (TCA cycle), organism-specific biosystem (from KEGG) Citrate cycle (TCA cycle), conserved biosystem (from KEGG)
Function	These data indicate that response of bovine PC gene to thermal stress is through promoter regulation and suggest that there are unique characteristics of bovine PC promoters that may contribute to the physiological response to thermal stress. These data indicate that pyruvate carboxylase promoter 1 is activated by fatty acids found in serum of feed-restricted cows. Expression of pyruvate carboxylase mRNA is part of the adaptive response to feed intake restriction
Unit Definition	One unit will convert 1.0 µmole of pyruvate and CO2 to oxalacetate per min at pH 7.8 at 30°C.

Storage and Shipping Information

Storage	−20°C